CDX-434RF/530RF/535RF

SERVICE MANUAL

US Model
Canadian Model
CDX-434RF/530RF
AEP Model
UK Model
CDX-434RF
E Model
CDX-434RF/535RF

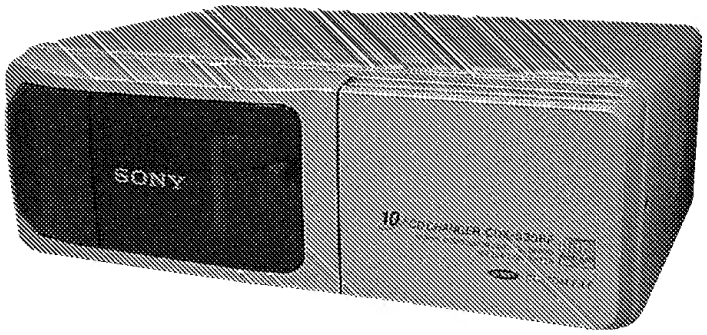


Photo: CDX-535RF

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-251A-137
Optical Pick-up Name	KSS-720A/K1NP

SPECIFICATIONS

CD changer

System	Compact disc digital audio system
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

** This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Transmitting frequency	88.3 MHz/88.5 MHz/ 88.7 MHz/88.9 MHz/ 89.1 MHz/89.3 MHz/ 89.5 MHz/89.7 MHz/ 89.9 MHz (switchable)
Input/output terminals	Wired remote control (8 pin) RF signal (FM) output Power input (3 pin)
Current drain	800 mA (at playback) 800 mA (at disc loading/ ejecting)
Operating temperature	–10°C to +55°C (14°F to 131°F)
Dimensions	Approx. 262 × 90 × 181.5 mm ($10\,^{3}/_{8} \times 3\,^{5}/_{8} \times 7\,^{1}/_{4}$ in.) (w/h/d)
Mass	Approx. 2.1 kg (4 lb. 10 oz.)

Relay box

Input/output	Antenna input terminal Antenna output cord CD Changer input cord
Dimensions	Approx. 40 × 40 × 27 mm ($1\,^{5}/_{8} \times 1\,^{5}/_{8} \times 1\,^{1}/_{8}$ in.) (w/h/d)
Mass	140 g (5 oz.)

Wired remote (RM-X88) (CDX-434RF)

Dimensions	Approx. 122 × 36.5 × 15.5 mm ($4\,^{7}/_{8} \times 1\,^{7}/_{16} \times {}^{5}/_{8}$ in.) (w/h/d)
Mass	Approx. 255 g (9 oz.)

Wired remote (RM-X87) /Wireless remote (RM-X89) (CDX-530RF/535RF)

Dimensions	Wired remote: Approx. 122 × 36.5 × 15.5 mm ($4\,^{3}/_{8} \times 1\,^{7}/_{16} \times {}^{5}/_{8}$ in.) (w/h/d) Wireless remote: Approx. 40 × 6.5 × 86 mm ($1\,^{5}/_{8} \times {}^{9}/_{32} \times 3\,^{1}/_{2}$ in.) (w/h/d)
Mass	Wired remote: Approx. 255 g (9 oz.) Wireless remote: Approx. 20 g (1 oz.)
Battery	Wireless remote: Lithium battery (CR2025)

Supplied accessories

Disc magazine (1)
Parts for installation and connections (1 set)

Design and specifications are subject to change without notice.

COMPACT DISC CHANGER SYSTEM

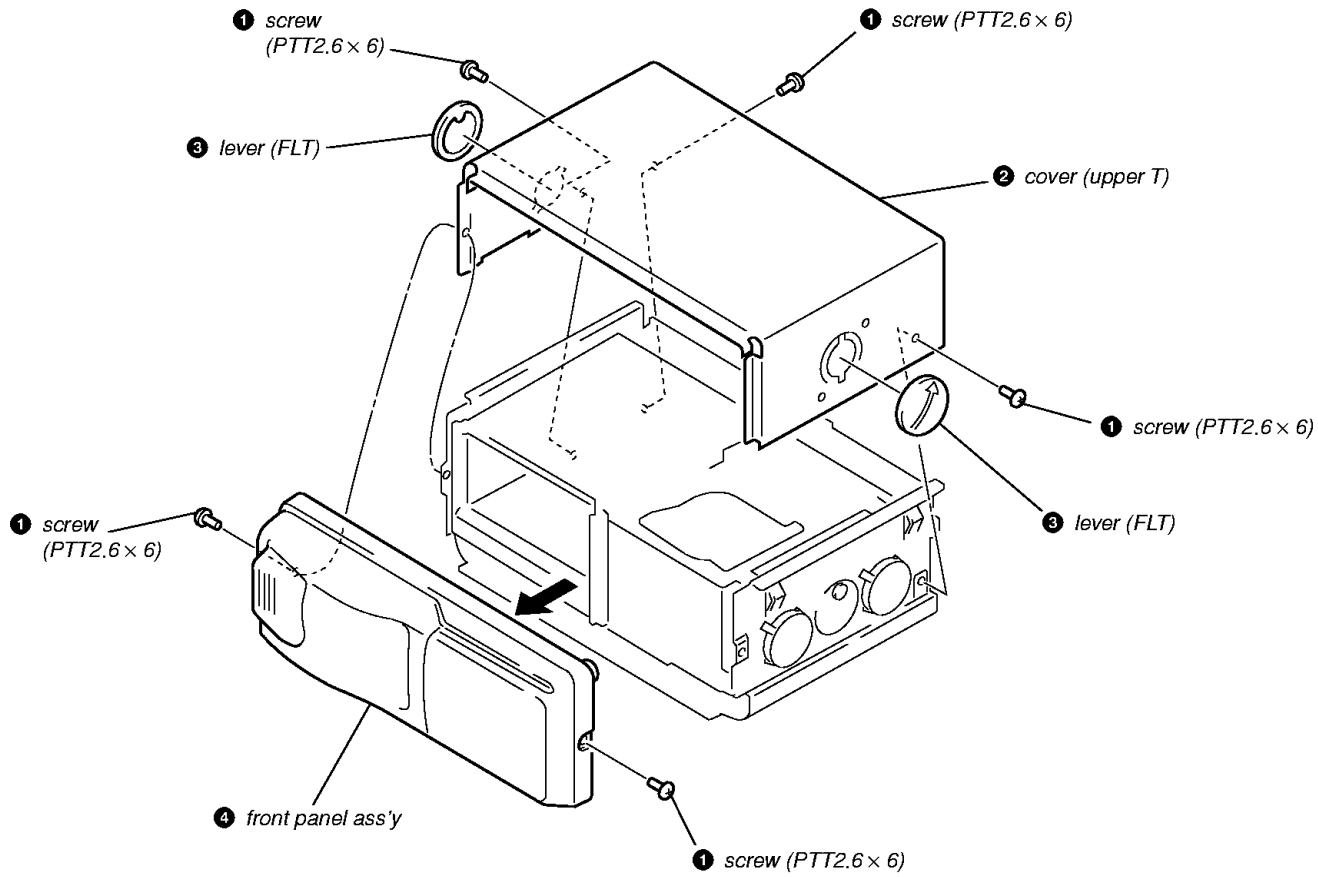
MICROFILM

SONY®

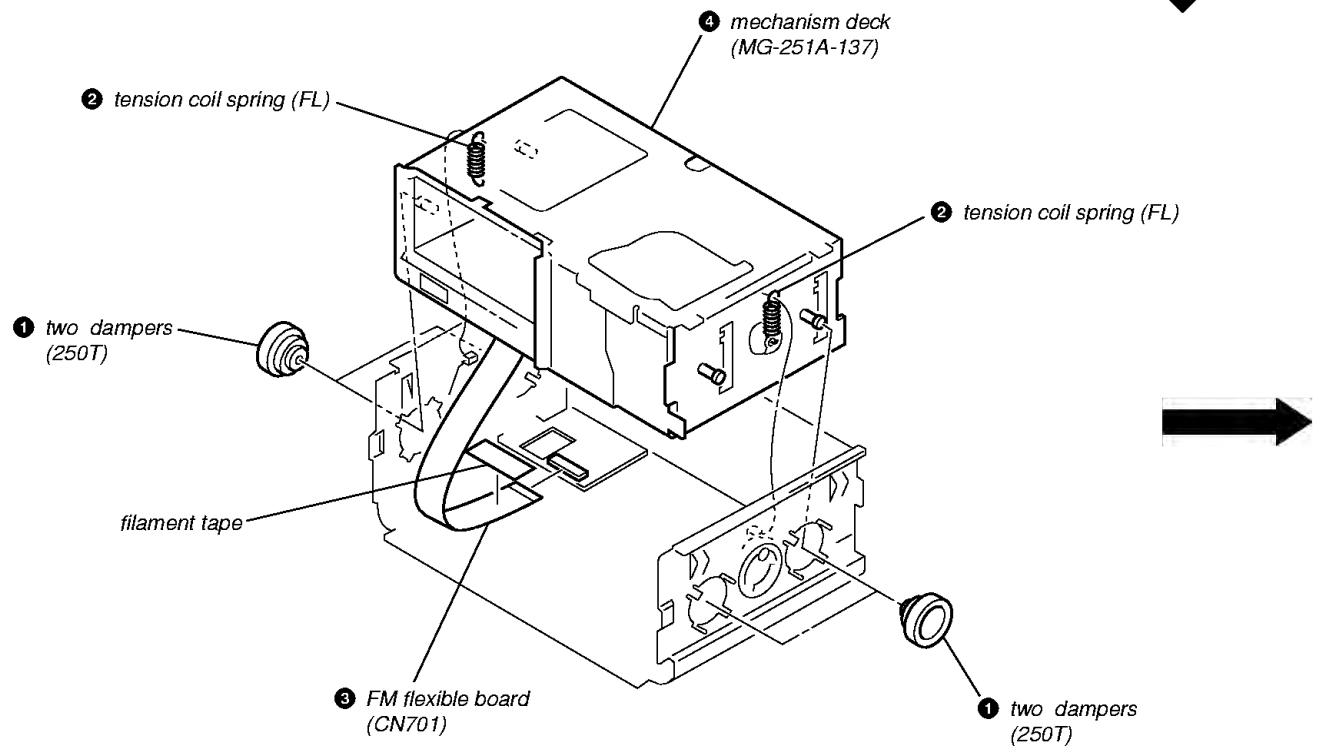
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

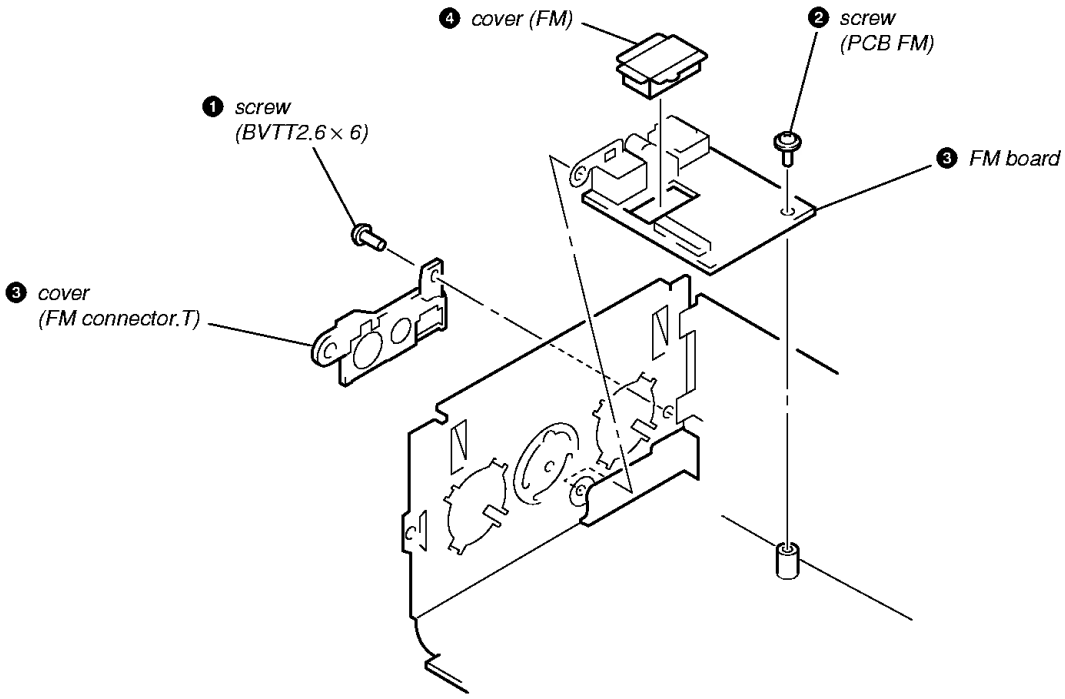
COVER (UPPER T), FRONT PANEL ASS'Y


❶ screw (PTT2.6 × 6)
❶ screw (PTT2.6 × 6)
❸ lever (FLT)
❷ cover (upper T)
❶ screw (PTT2.6 × 6)
❸ lever (FLT)
❶ screw (PTT2.6 × 6)
❹ front panel ass'y
❶ screw (PTT2.6 × 6)

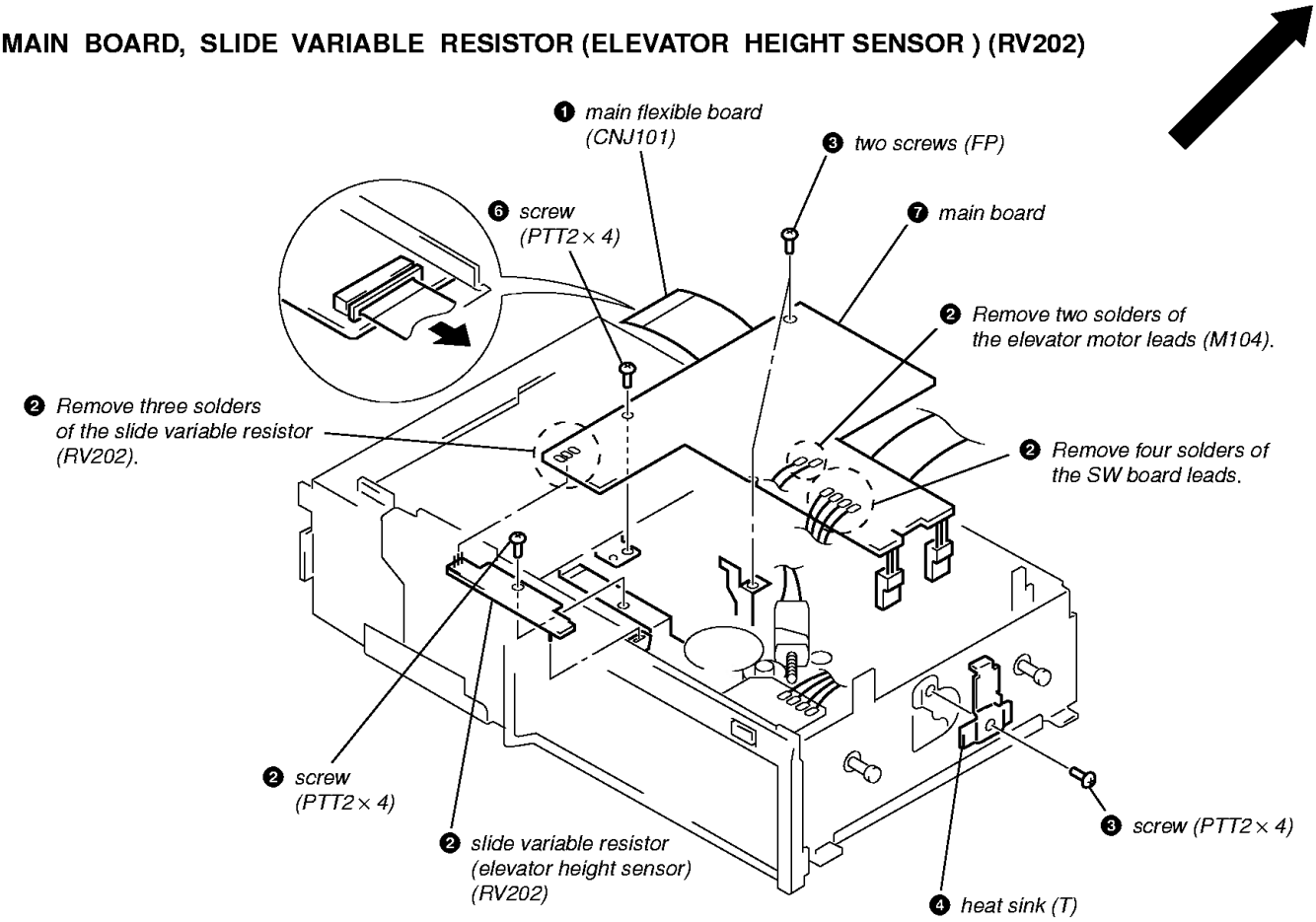
MECHANISM DECK (MG-251A-137)


❹ mechanism deck (MG-251A-137)
❷ tension coil spring (FL)
❷ tension coil spring (FL)
❶ two dampers (250T)
filament tape
❸ FM flexible board (CN701)
❶ two dampers (250T)

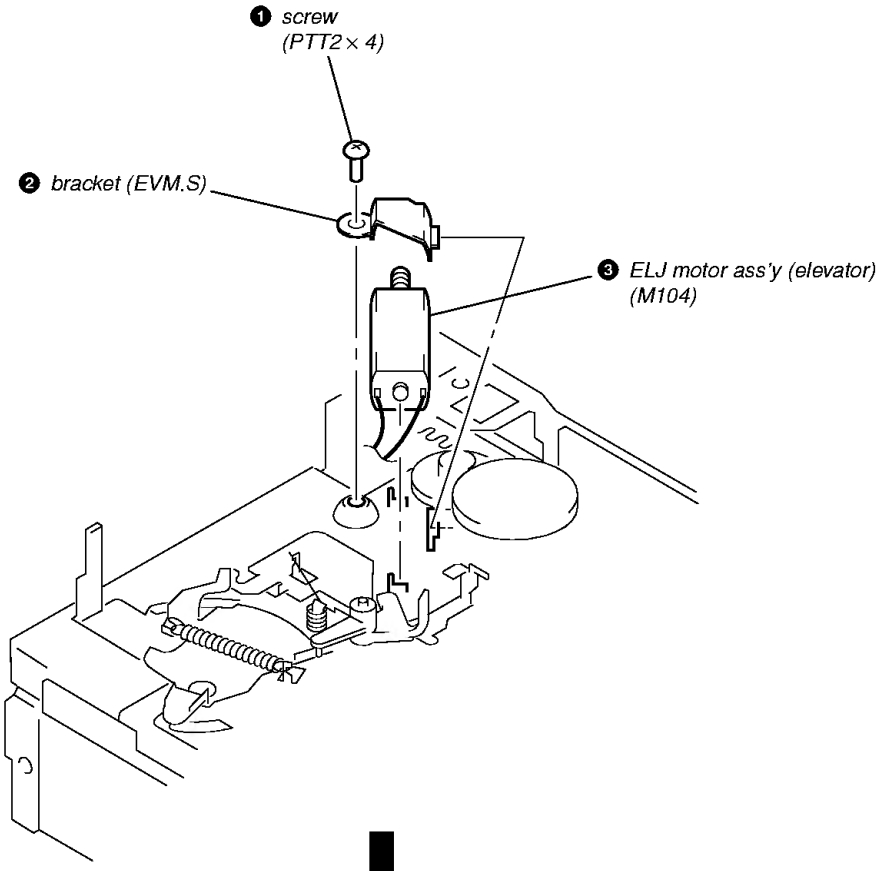
FM BOARD



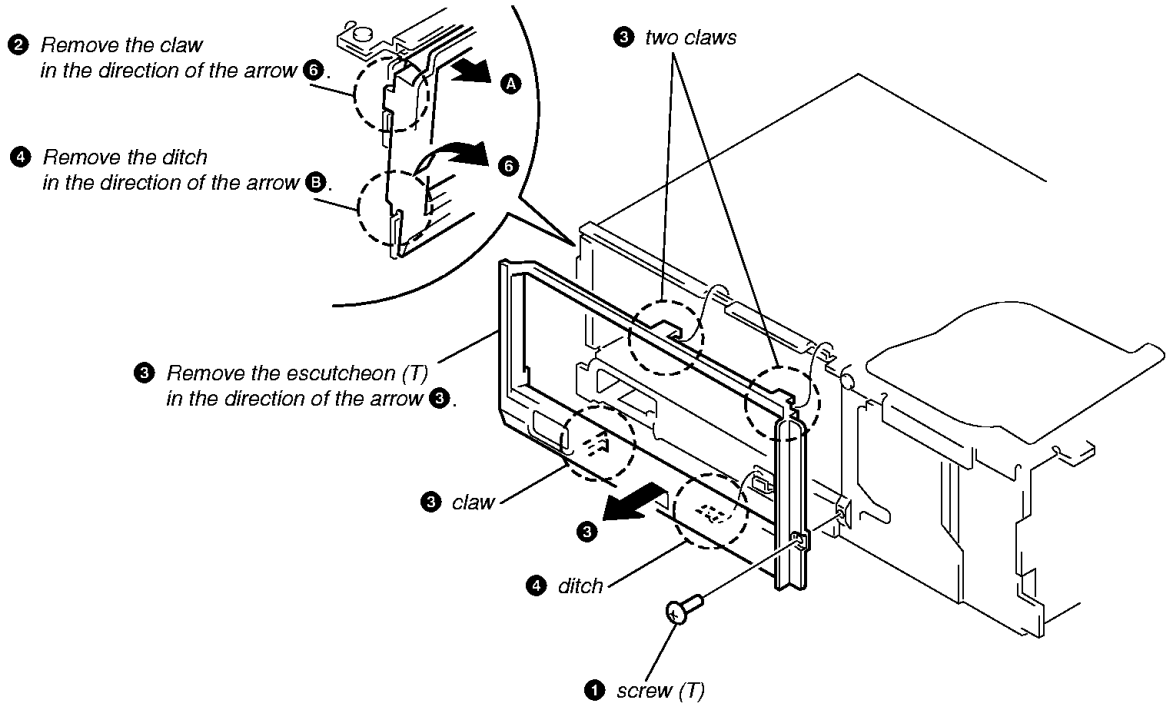
MAIN BOARD, SLIDE VARIABLE RESISTOR (ELEVATOR HEIGHT SENSOR) (RV202)


❶ main flexible board (CNJ101)
❸ two screws (FP)
❻ screw (PTT2 × 4)
❼ main board
❷ Remove two solders of the elevator motor leads (M104).
❷ Remove three solders of the slide variable resistor (RV202).
❷ Remove four solders of the SW board leads.
❷ screw (PTT2 × 4)
❷ slide variable resistor (elevator height sensor) (RV202)
❸ screw (PTT2 × 4)
❹ heat sink (T)

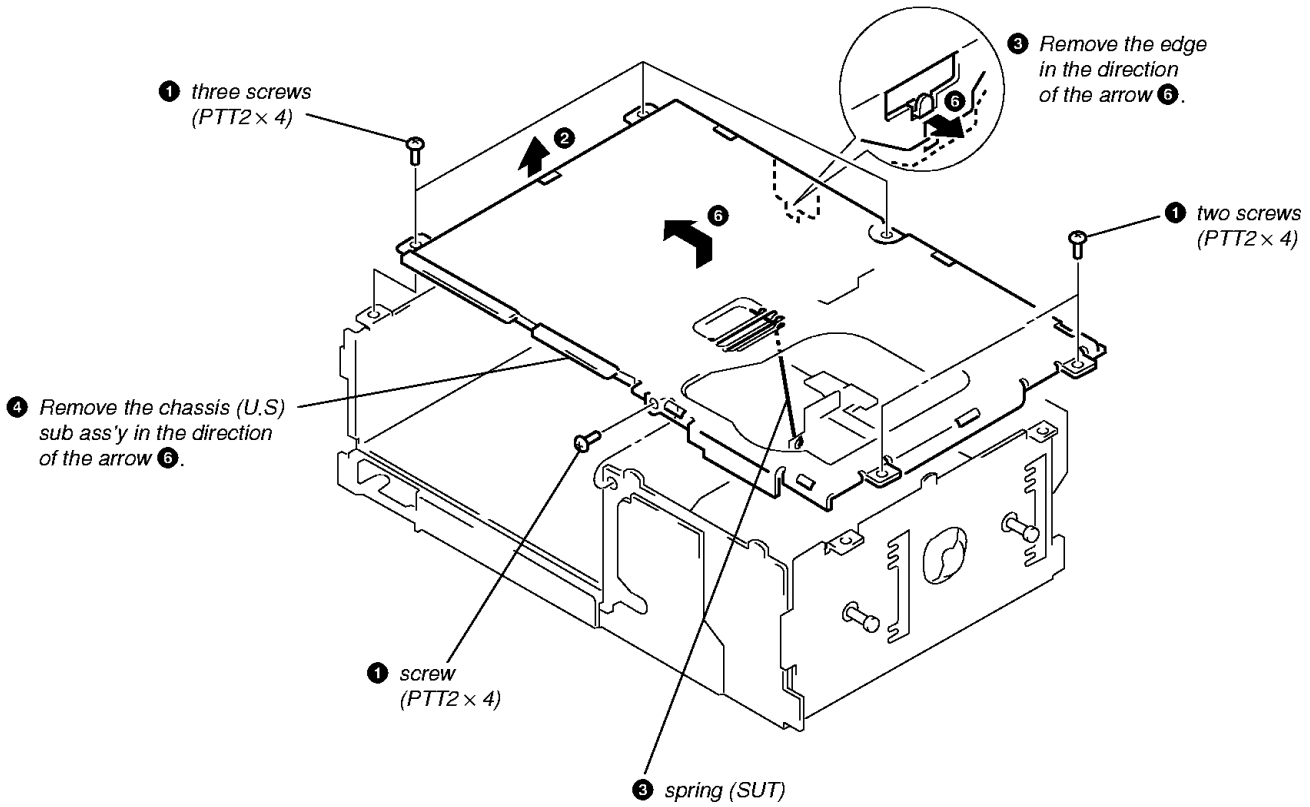
ELJ MOTOR ASS'Y (ELEVATOR) (M104)



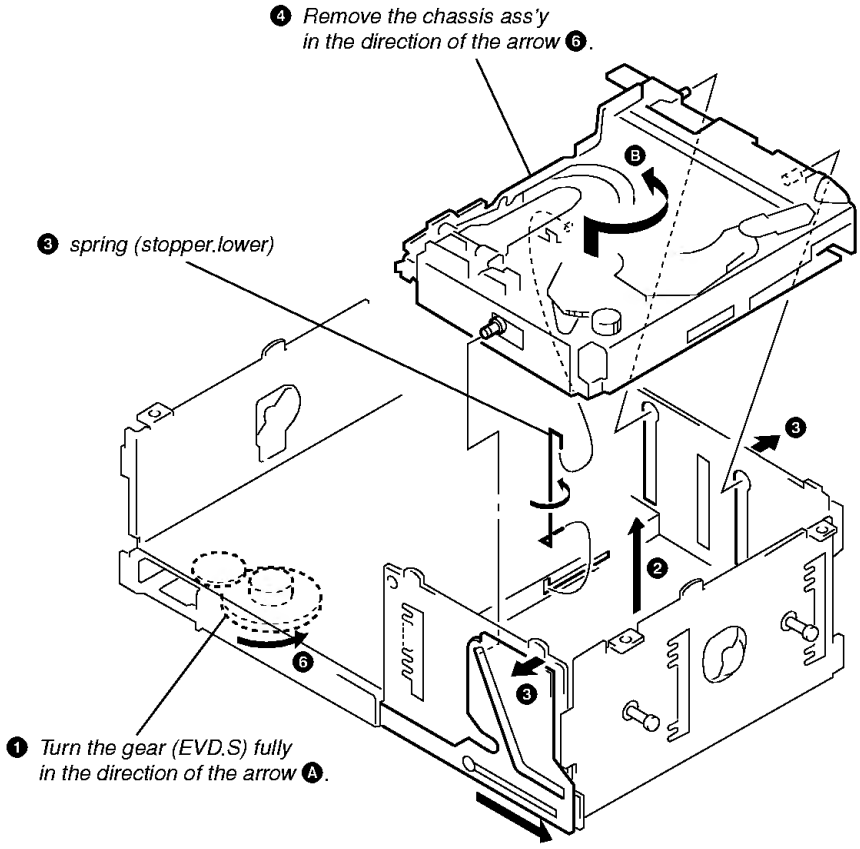
ESCUTCHEON (T)



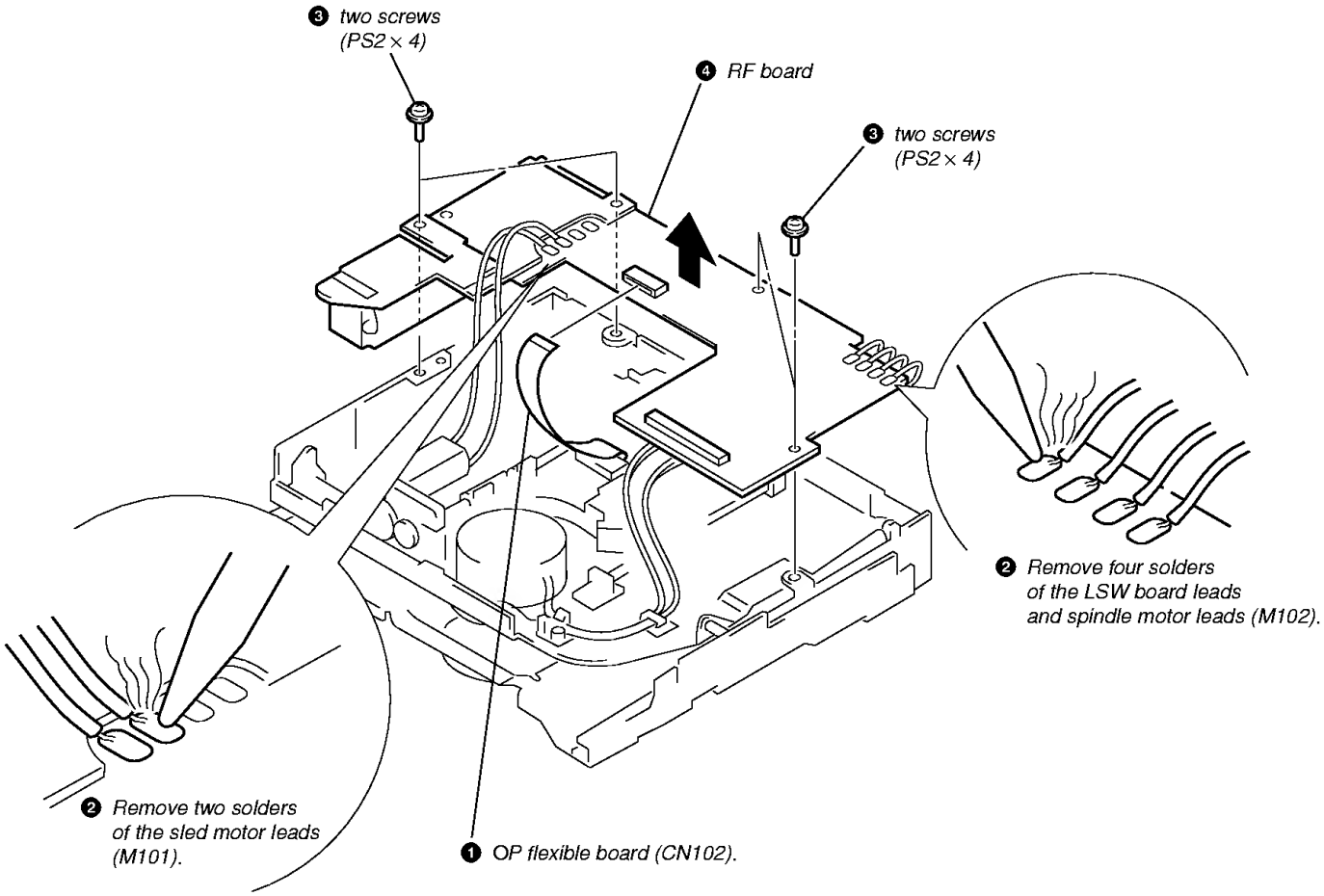
CHASSIS (U.S) SUB ASS'Y


❶ three screws (PTT2× 4)
❸ Remove the edge in the direction of the arrow ❻.
❶ two screws (PTT2× 4)
❹ Remove the chassis (U.S) sub ass'y in the direction of the arrow ❻.
❶ screw (PTT2× 4)
❸ spring (SUT)

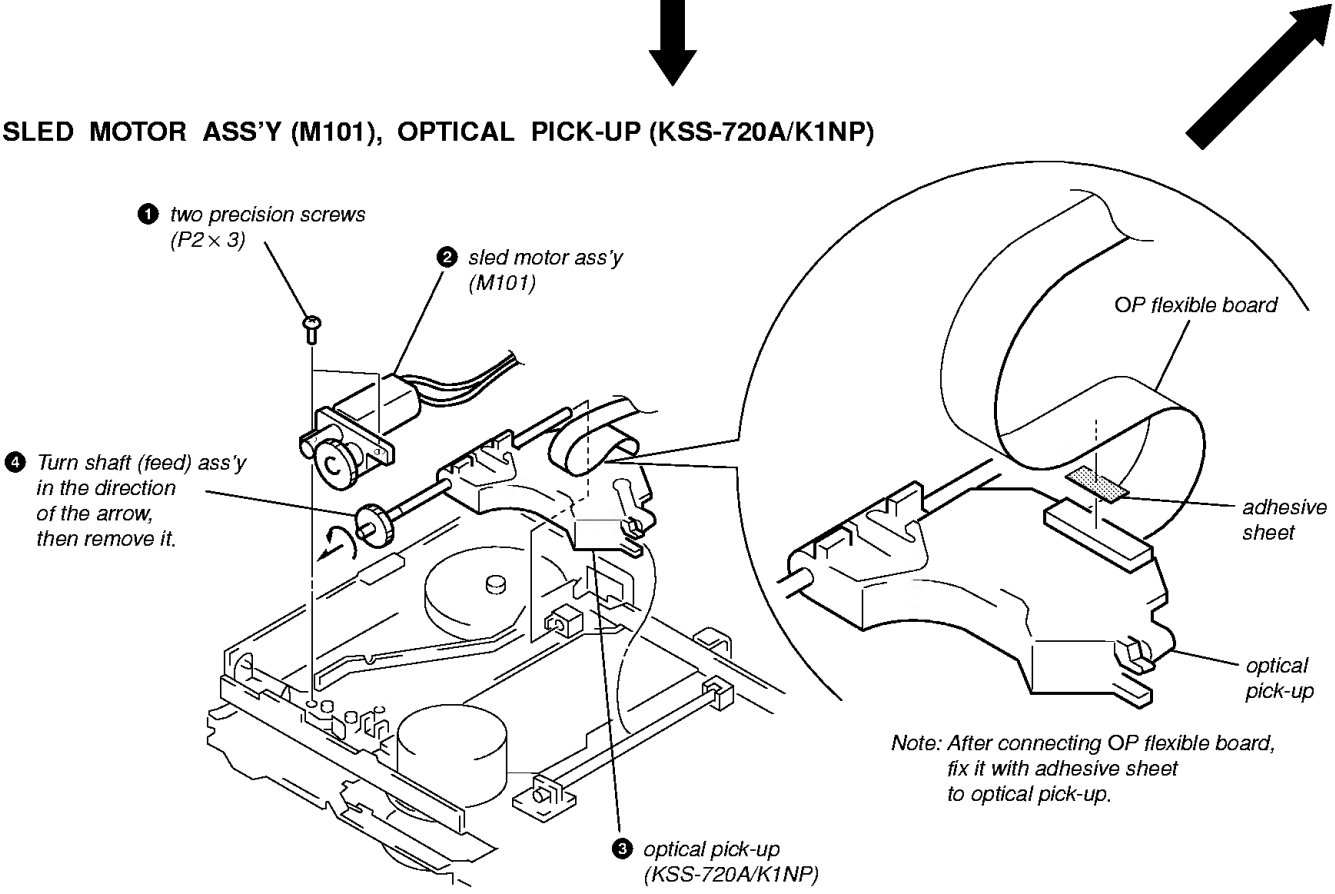
CHASSIS ASS'Y


❹ Remove the chassis ass'y in the direction of the arrow ❻.
❸ spring (stopper.lower)
❶ Turn the gear (EVD.S) fully in the direction of the arrow Ⓐ.

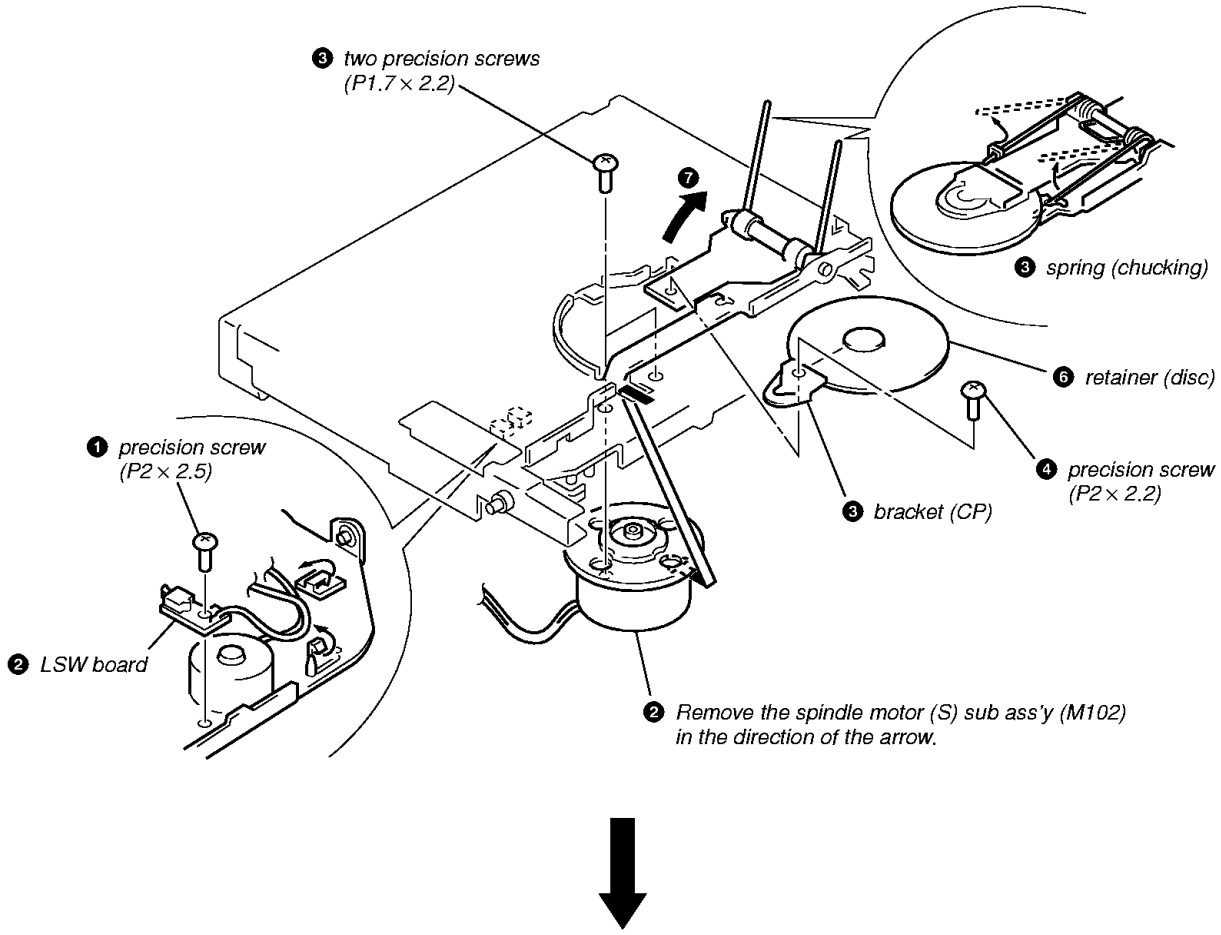
RF BOARD



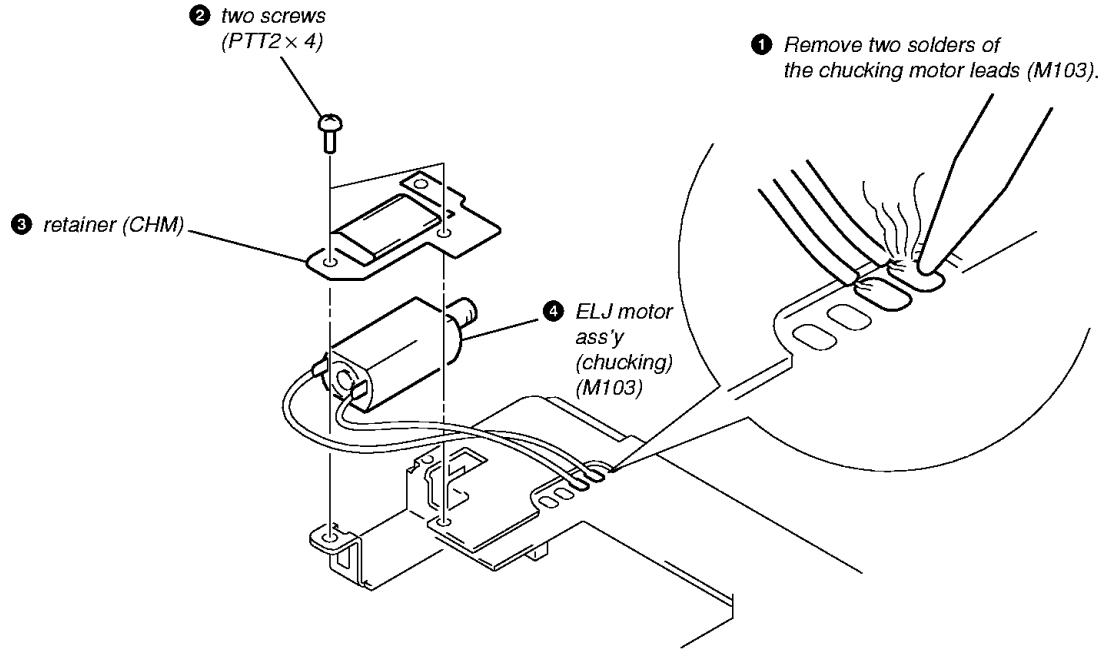
SLED MOTOR ASS'Y (M101), OPTICAL PICK-UP (KSS-720A/K1NP)



LSW BOARD, SPINDLE MOTOR (S) SUB ASS'Y (M102)


❸ two precision screws (P1.7 × 2.2)
❼
❸ spring (chucking)
❻ retainer (disc)
❶ precision screw (P2 × 2.5)
❹ precision screw (P2 × 2.2)
❸ bracket (CP)
❷ LSW board
❷ Remove the spindle motor (S) sub ass'y (M102) in the direction of the arrow.

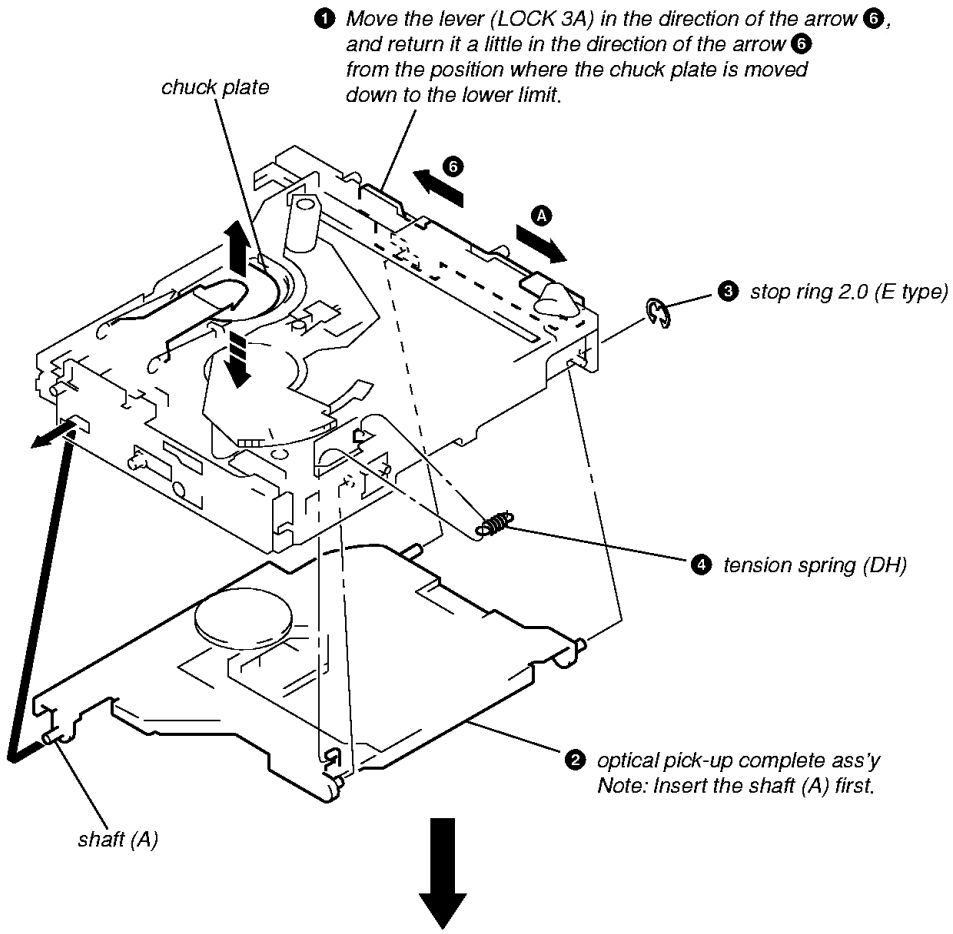
ELJ MOTOR ASS'Y (CHUCKING) (M103)



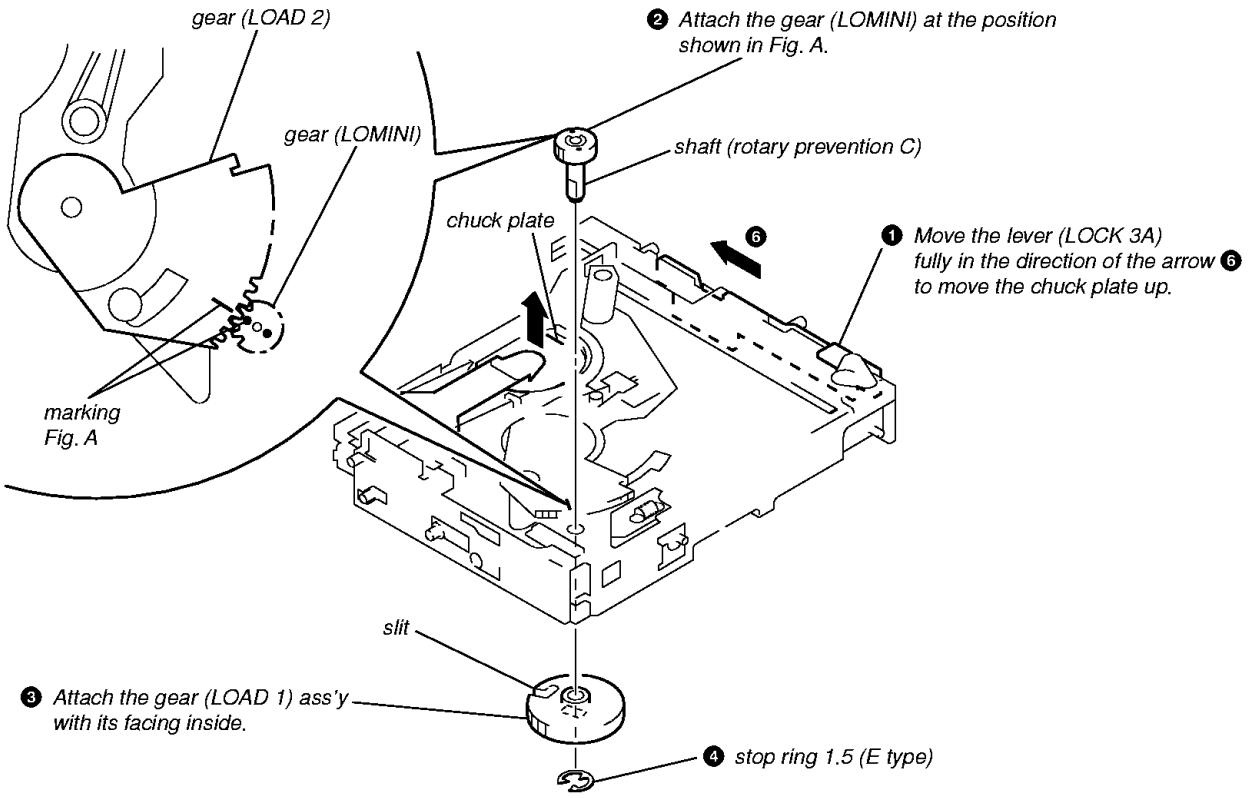
SECTION 4
MECHANISM DECK ASSEMBLY

Note: Follow the assembly procedure in the numerical order given.

OPTICAL PICK-UP COMPLETE ASS'Y

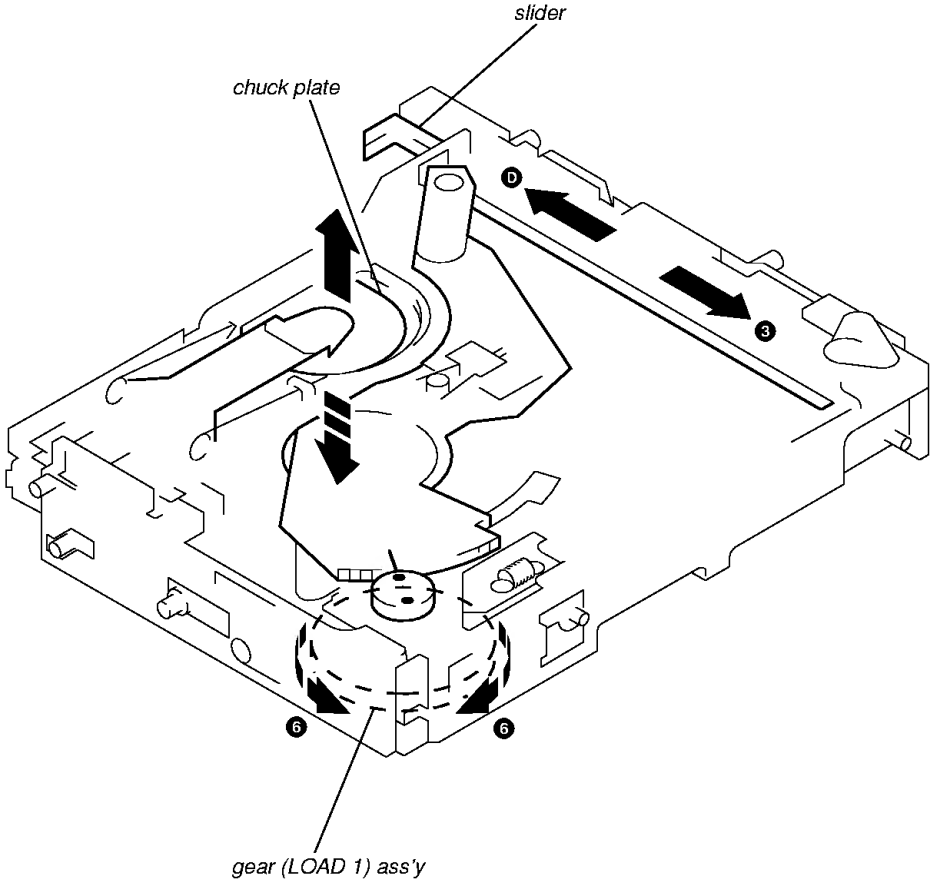

❶ Move the lever (LOCK 3A) in the direction of the arrow ❻, and return it a little in the direction of the arrow ❻ from the position where the chuck plate is moved down to the lower limit.
chuck plate
❸ stop ring 2.0 (E type)
❹ tension spring (DH)
❷ optical pick-up complete ass'y
Note: Insert the shaft (A) first.
shaft (A)

GEAR (LOMINI)/(LOAD 1) ASS'Y


gear (LOAD 2)
❷ Attach the gear (LOMINI) at the position shown in Fig. A.
gear (LOMINI)
shaft (rotary prevention C)
chuck plate
❶ Move the lever (LOCK 3A) fully in the direction of the arrow ❻ to move the chuck plate up.
marking Fig. A
slit
❸ Attach the gear (LOAD 1) ass'y with its facing inside.
❹ stop ring 1.5 (E type)

OPERATION CHECK

❶ *Confirm that the slider moves in the direction of the arrow ❸ to move down the chuck plate if the gear (LOAD 1) is rotated in the direction of the arrow ❻ or the chuck plate moves up and the slider moves in the direction of the arrow Ⓓ if the gear is rotated in the direction of the arrow ❻.*

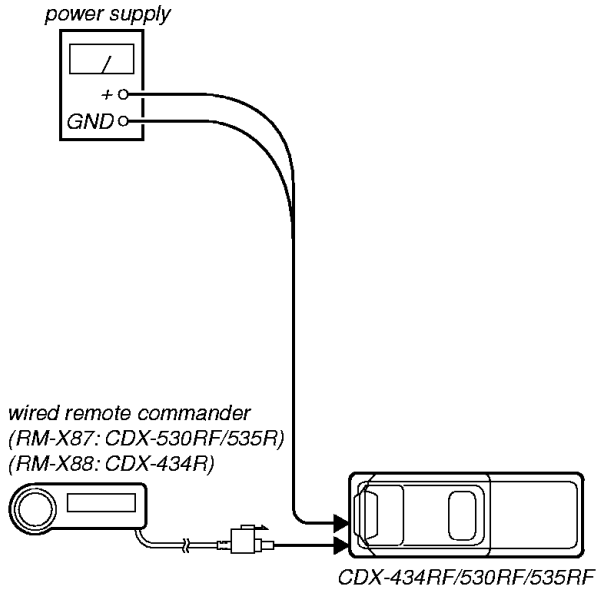


SECTION 5
MECHANICAL ADJUSTMENT

• Elevator Height (Address) Adjustment

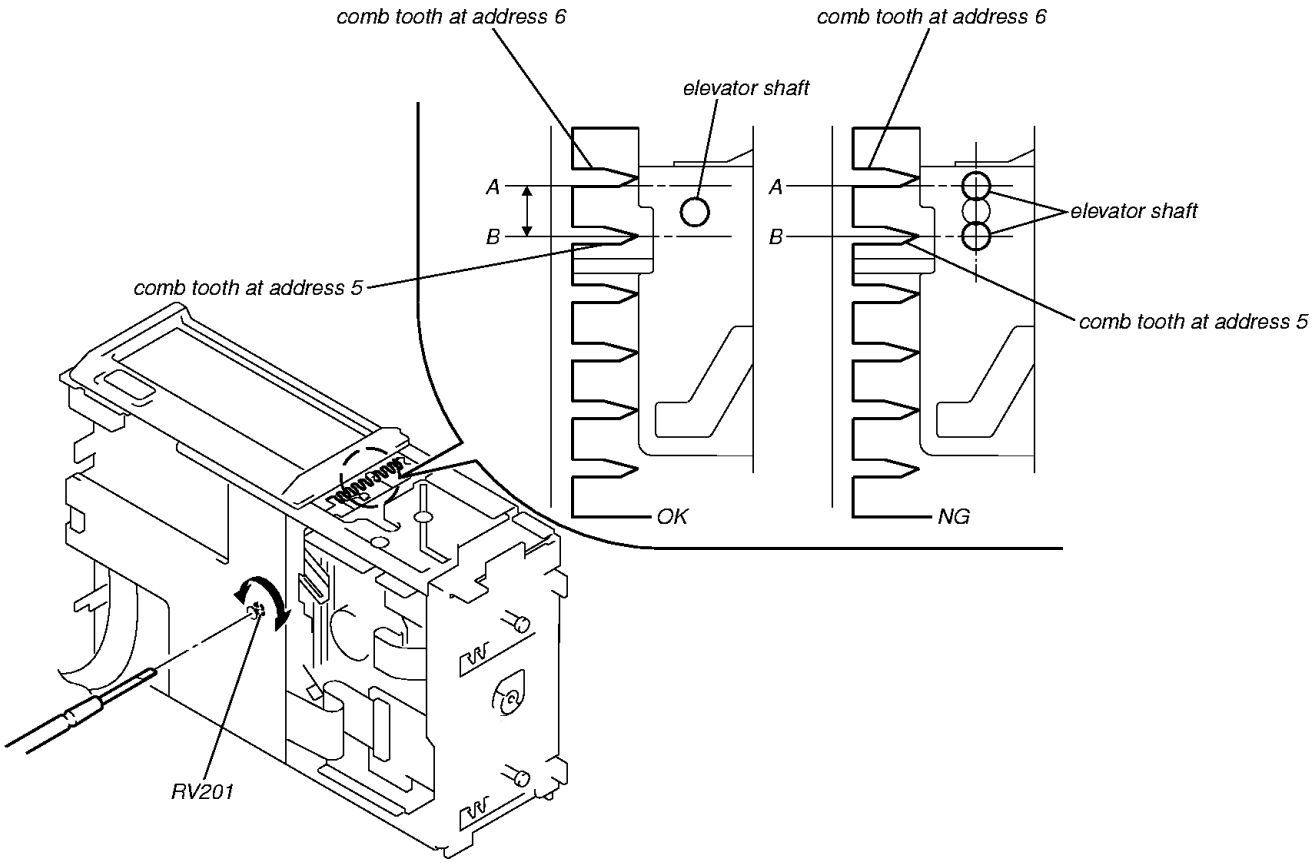
Note: This adjustments is necessary when the system controller (IC201), variable resistor (RV201), slider (R), slider (L), or chassis (ELV) was replaced for any repair.

Connection:



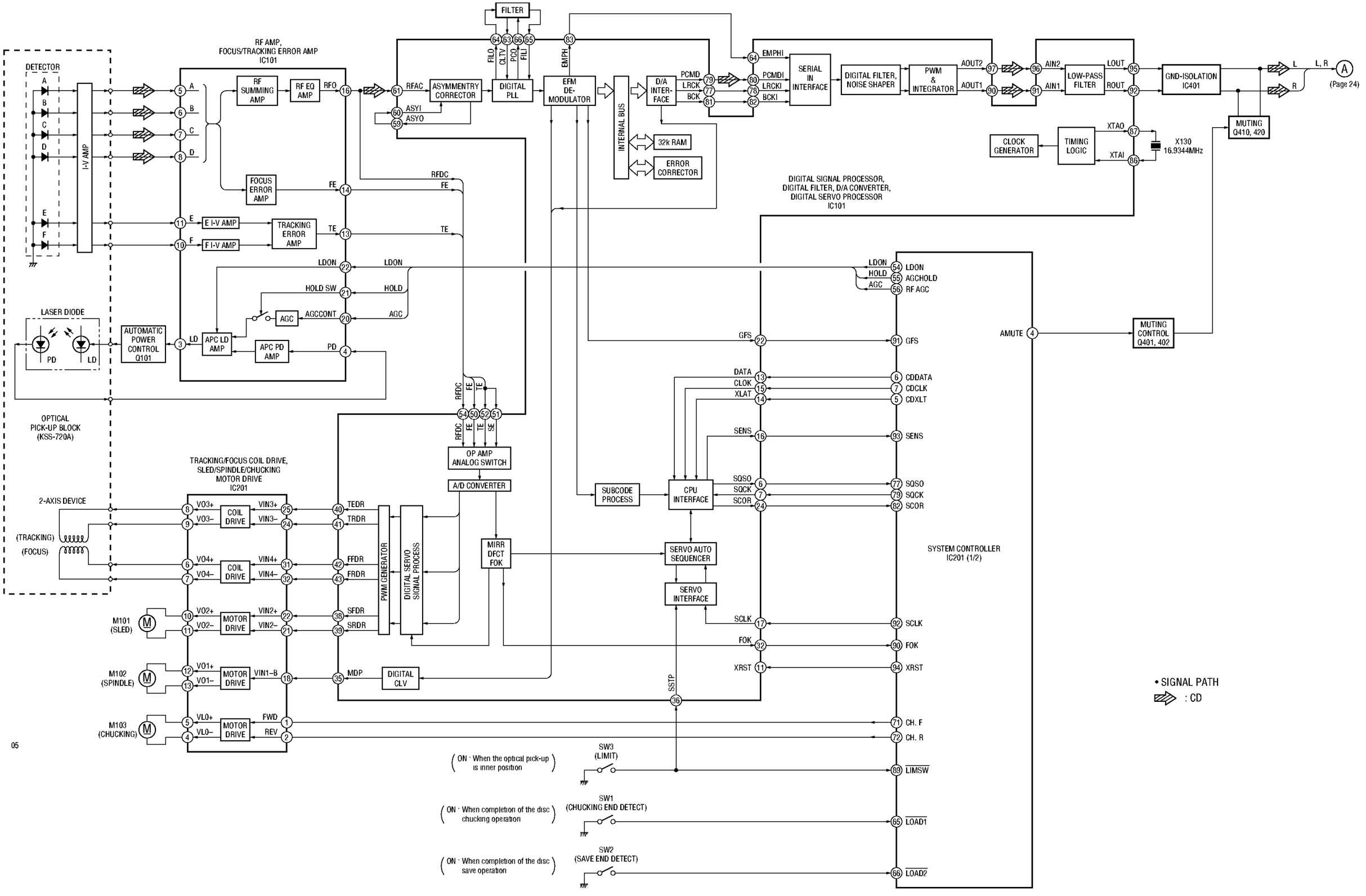
Adjustment Method:

1. Load a disc magazine, and place the set vertically as shown below.
2. Connect the regulated power supply, and turn the power on.
3. Press the DISC button on the wired remote commander (RM-X87/X88) and select DISC 5.
4. At this time, if the elevator shaft does not position between comb teeth A and B at addresses 5 and 6 as shown below, adjust the following.
5. Press repeatedly the DISC + and – buttons on the wired remote commander (RM-X87/X88) so that the elevator shafts moves from address 6 to address 5, or from 5 to 6. At this time, adjust RV201 on the main board so that the elevator shaft positions smoothly between comb teeth A and B.
6. Further, place the set horizontally and make same adjustment as mentioned above.
7. After adjustment at addresses 5 to 6 is finished, check all operations from addresses 1 to 10 with the set placed vertically and horizontally respectively to confirm that the elevator shaft positions in a range between comb teeth A to B.

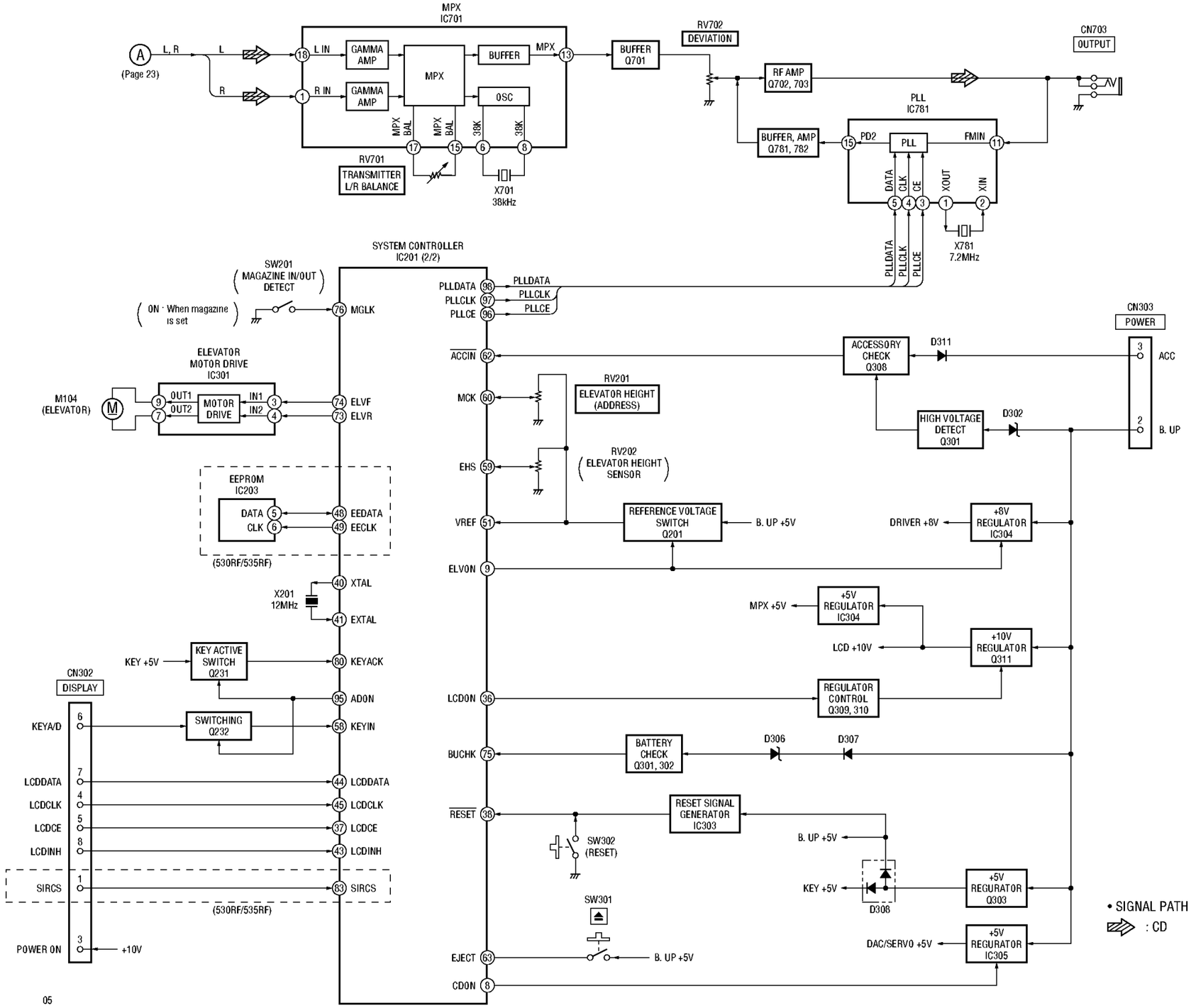


SECTION 7
DIAGRAMS

7-1. BLOCK DIAGRAM – RF SERVO Section –



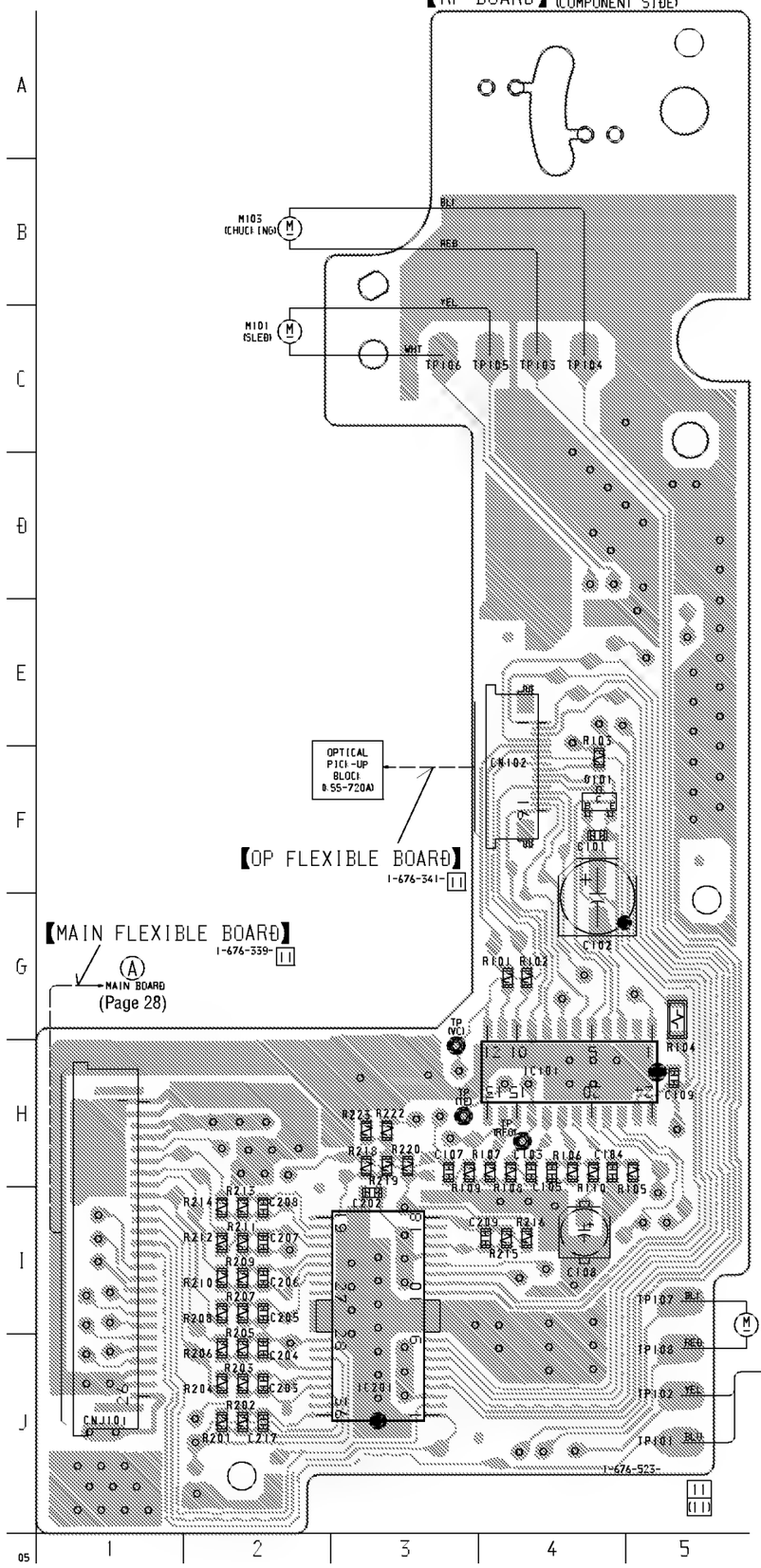
7-2. BLOCK DIAGRAM – MAIN Section –



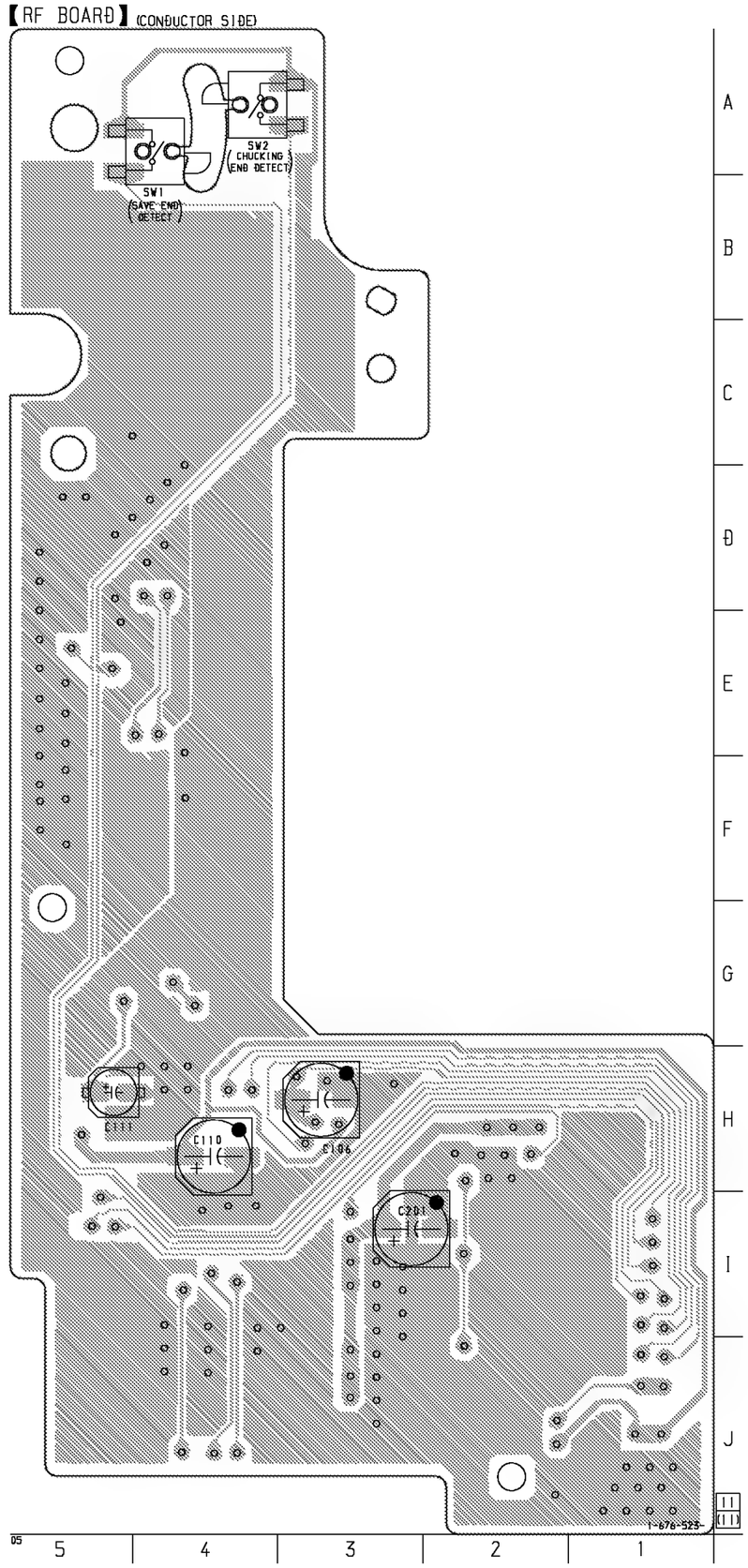
7-4. PRINTED WIRING BOARDS – RF Section –

• See page 25 for Circuit Boards Location.

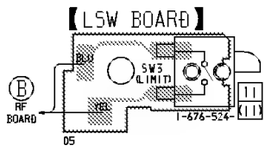
【RF BOARD】 (COMPONENT SIDE)



【RF BOARD】 (CONDUCTOR SIDE)

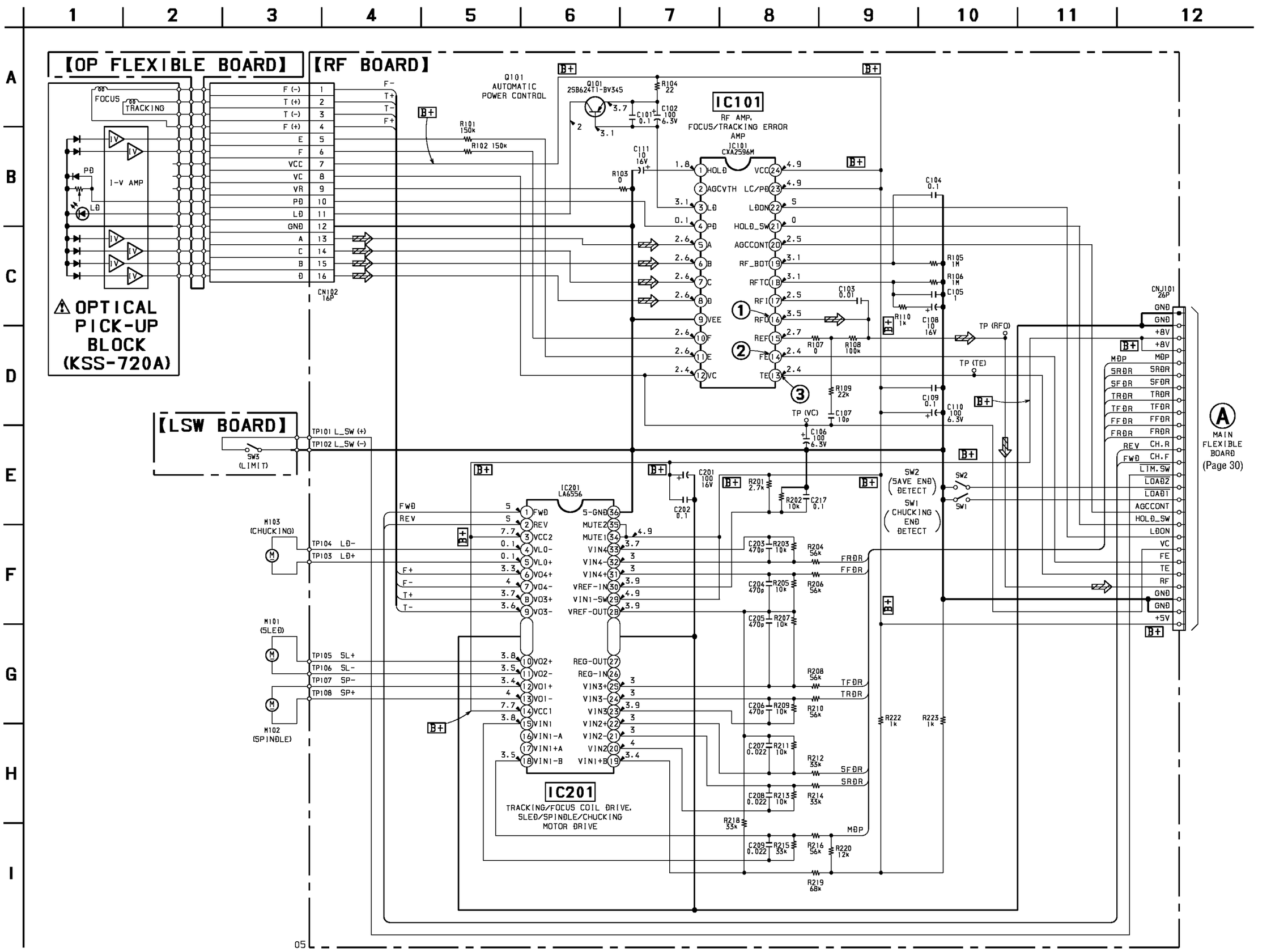


【LSW BOARD】



- **Semiconductor Location**

Ref. No.	Location
IC101	H-4
IC201	I-3
Q101	F-5

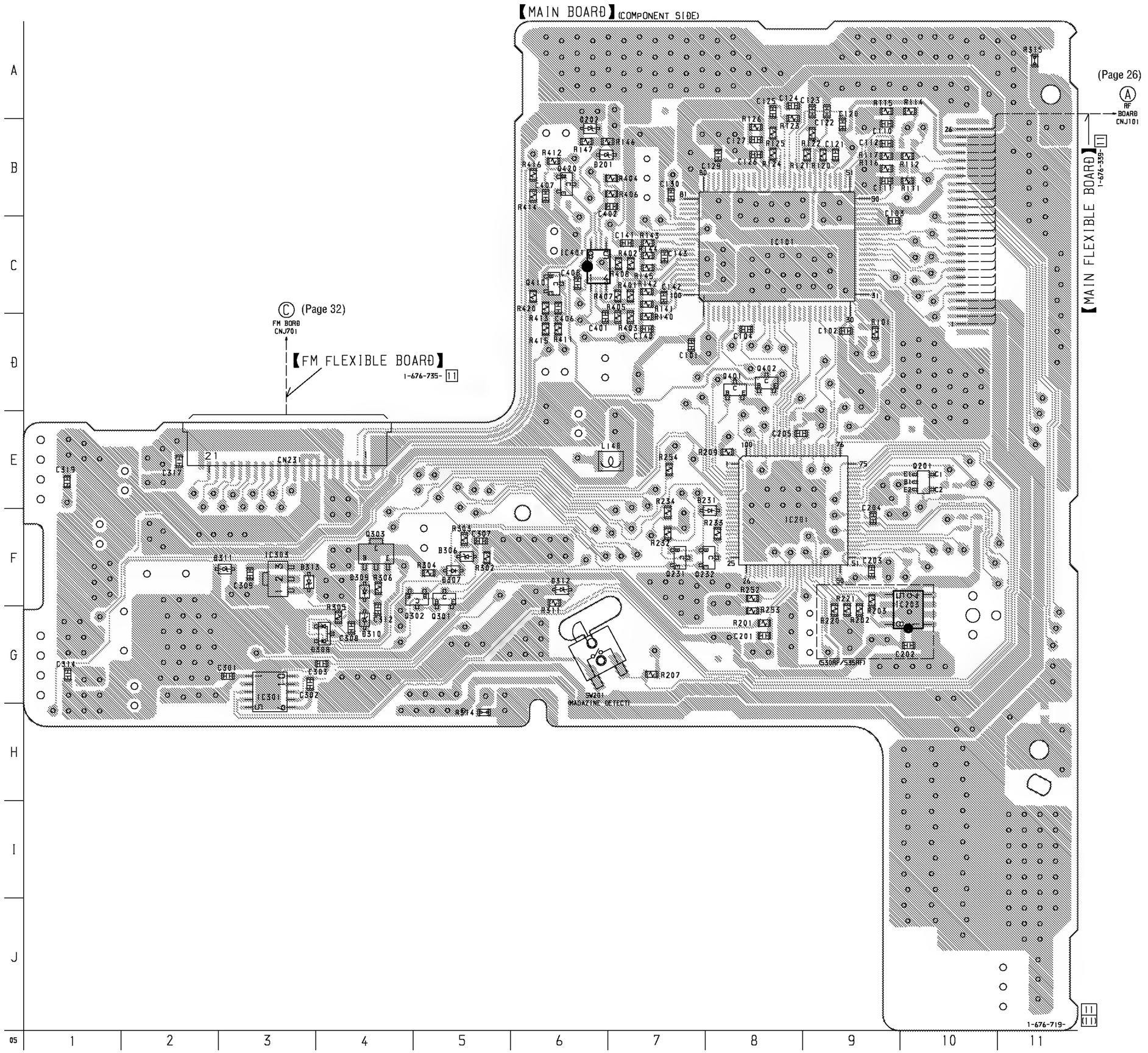


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-6. PRINTED WIRING BOARDS – MAIN Section (1/2) – • See page 25 for Circuit Boards Location.

• **Semiconductor Location**

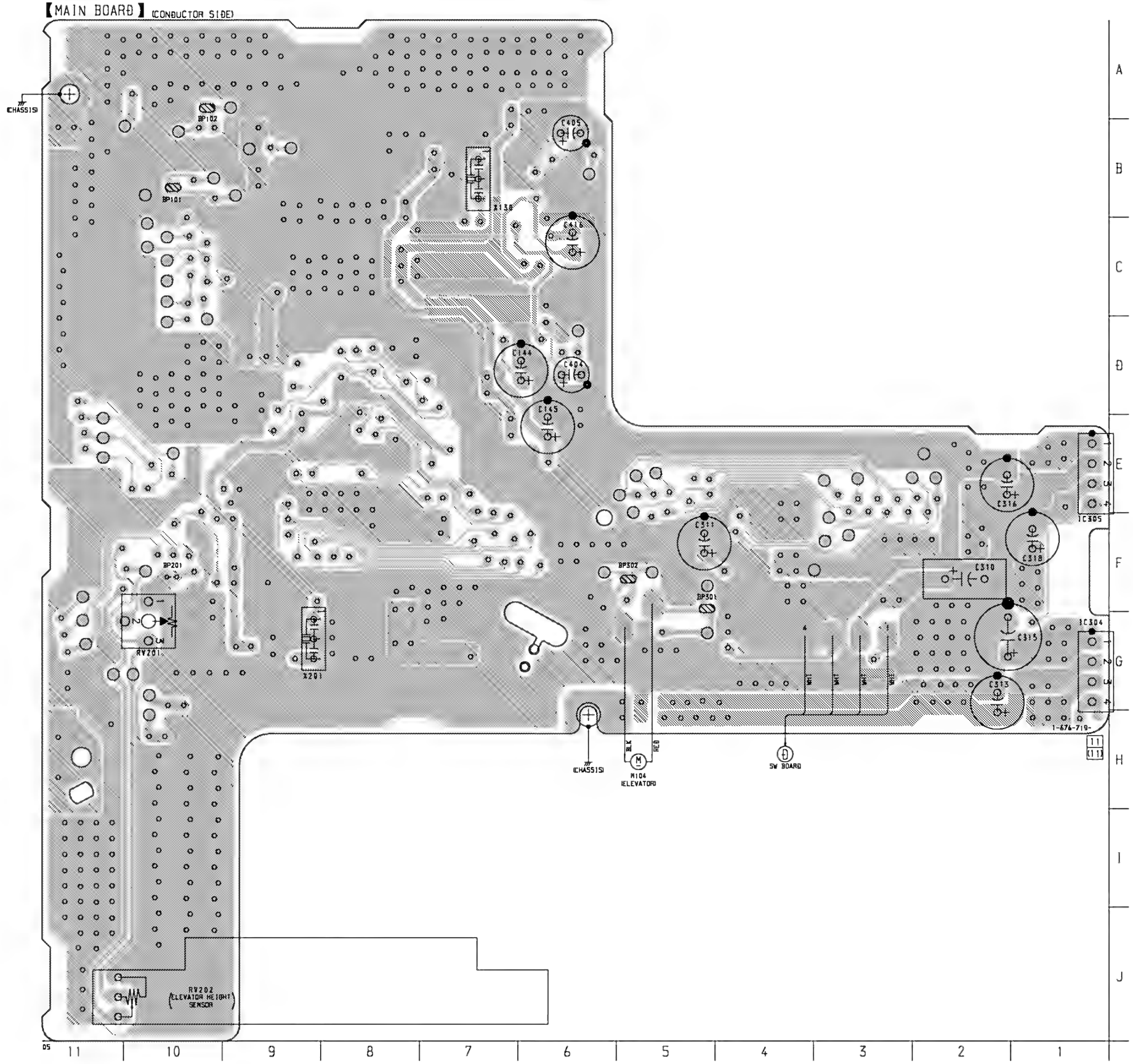
Ref. No.	Location
D201	B-6
D202	B-6
D231	F-8
D306	F-5
D307	F-5
D308	G-4
D309	F-4
D310	G-4
D311	F-3
D312	F-6
D313	F-3
IC101	C-8
IC201	F-8
IC203	G-10
IC301	G-3
IC303	F-3
IC401	C-6
Q201	E-10
Q231	F-7
Q232	F-8
Q301	F-5
Q302	F-5
Q303	F-4
Q401	D-8
Q402	D-8
Q410	C-6
Q420	B-6



7-7. PRINTED WIRING BOARDS -- MAIN Section (2/2) --

• See page 25 for Circuit Boards Location.

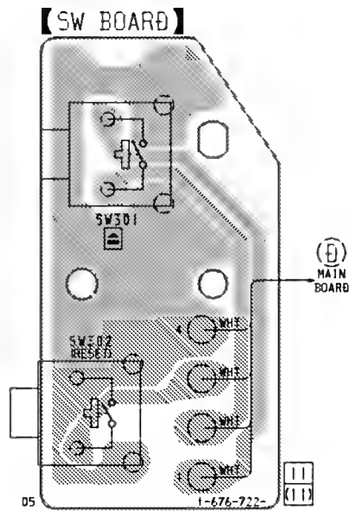
【MAIN BOARD】 (CONDUCTOR SIDE)



• **Semiconductor Location**

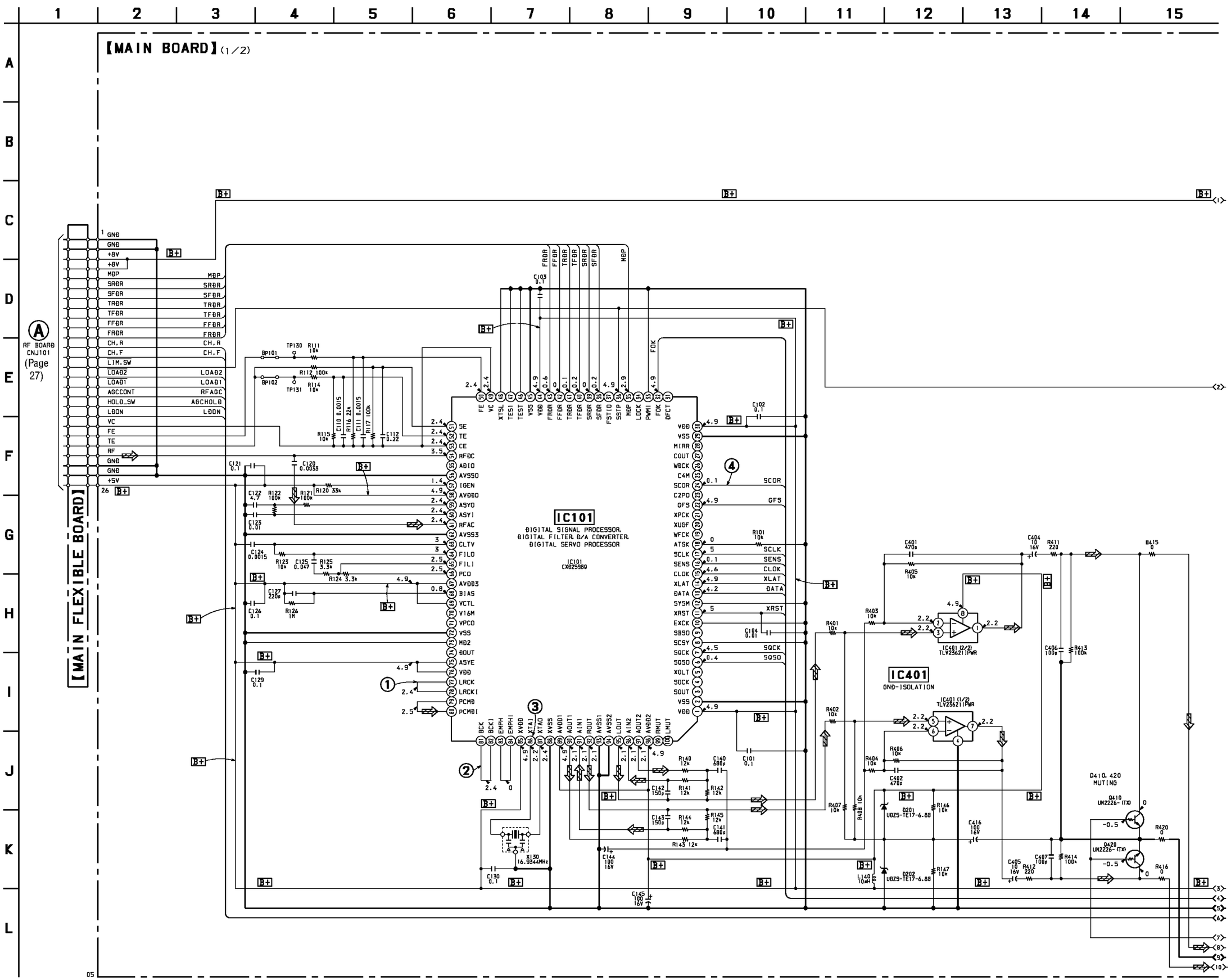
Ref. No.	Location
IC304	G-1
IC305	E-1

【SW BOARD】

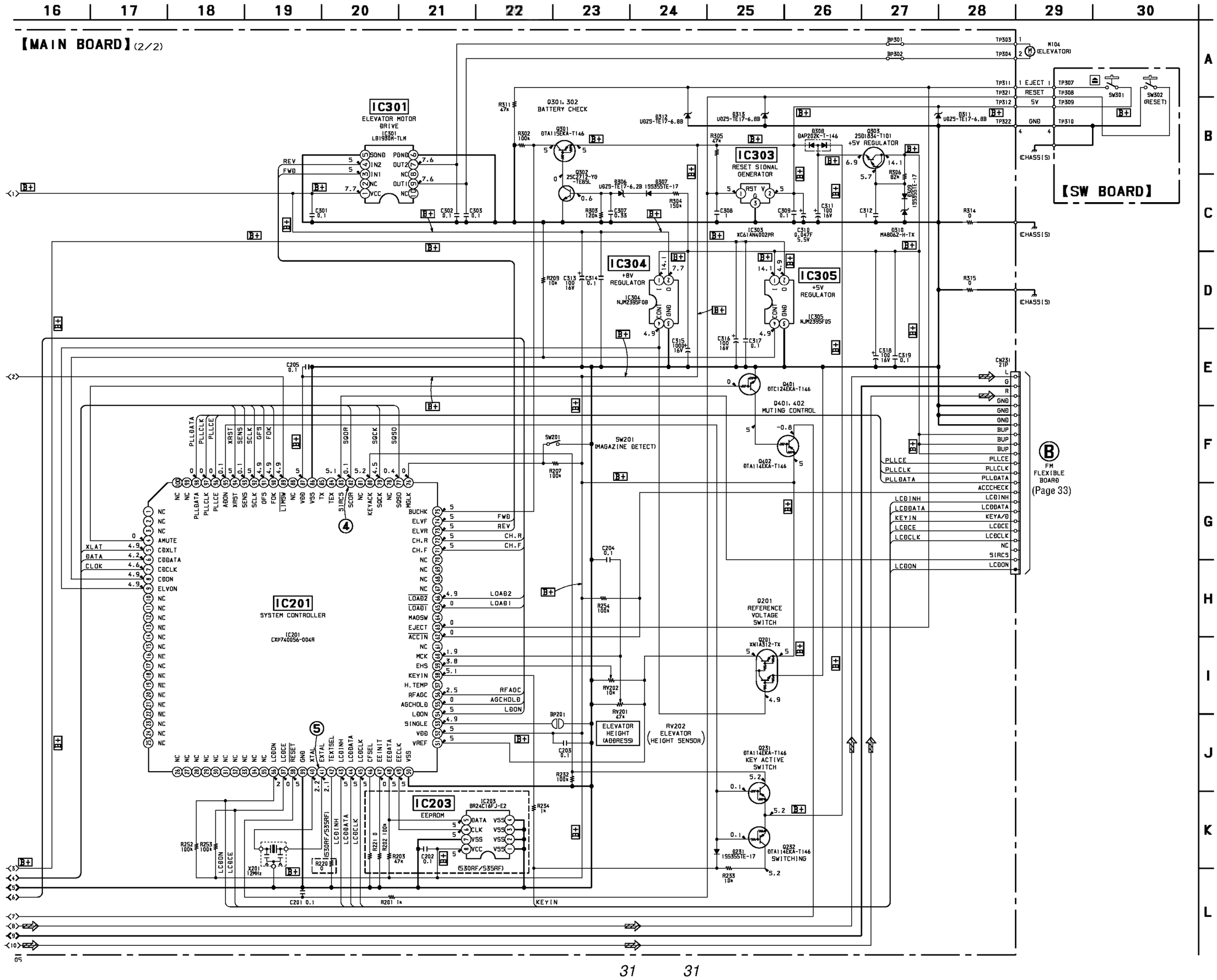


7-8. SCHEMATIC DIAGRAM – MAIN Section (1/2) –

• See page 36 for Waveforms. • See page 37 for IC Block Diagram.

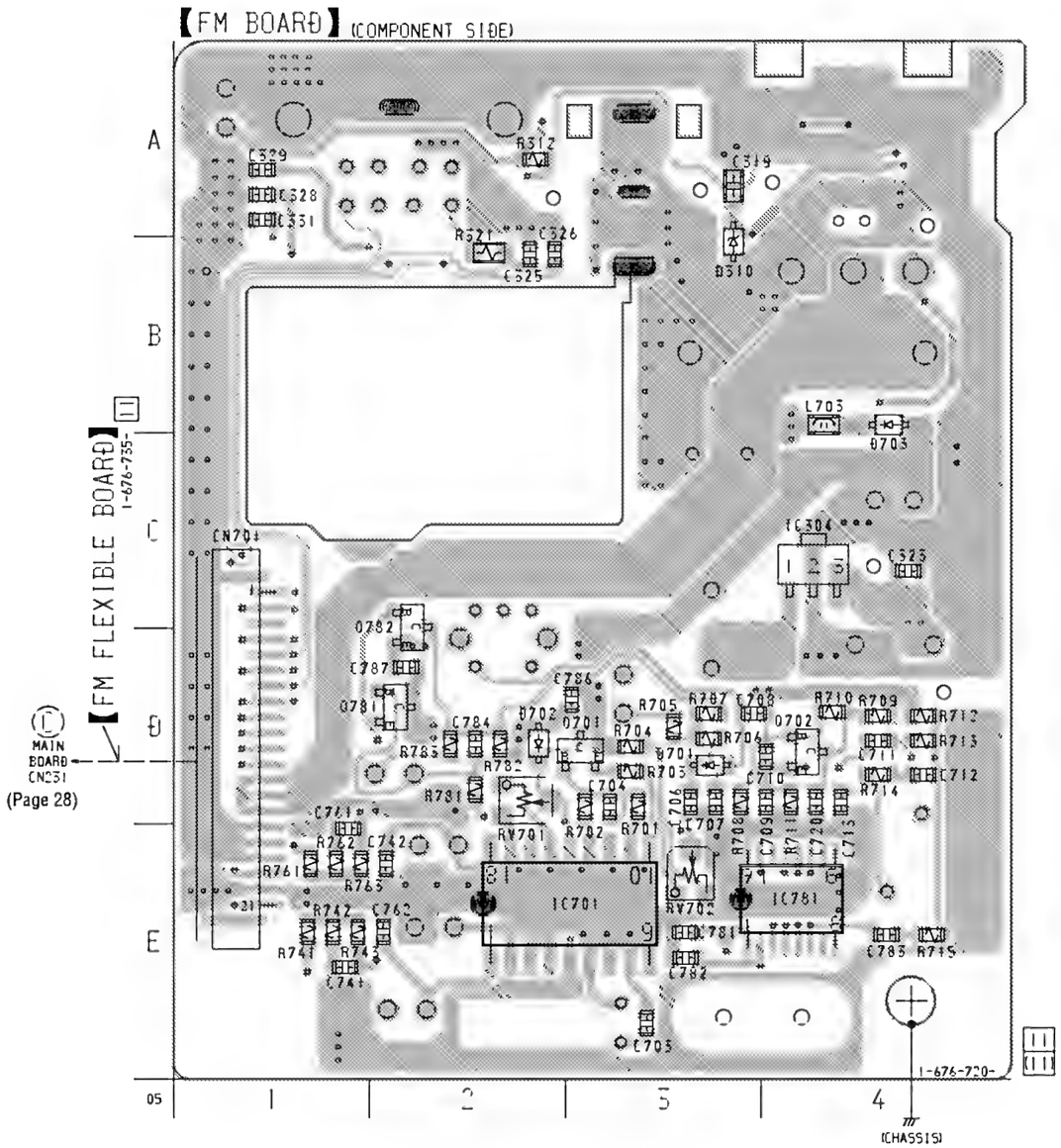


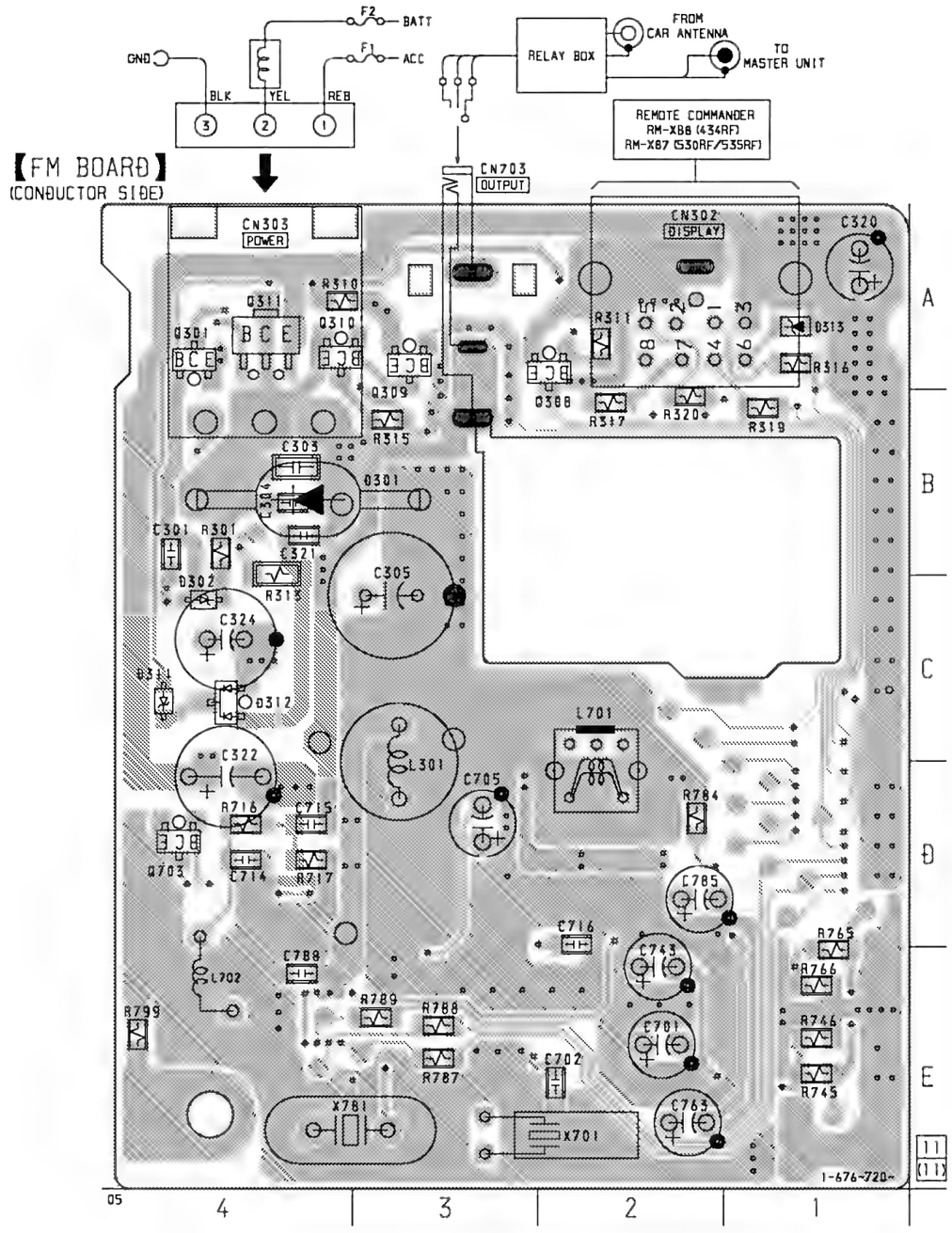
7-9. SCHEMATIC DIAGRAM – MAIN Section (2/2) – • See page 36 for Waveforms. • See page 37 for IC Block Diagrams.



7-10. PRINTED WIRING BOARDS – FM/POWER Section –

• See page 25 for Circuit Boards Location.





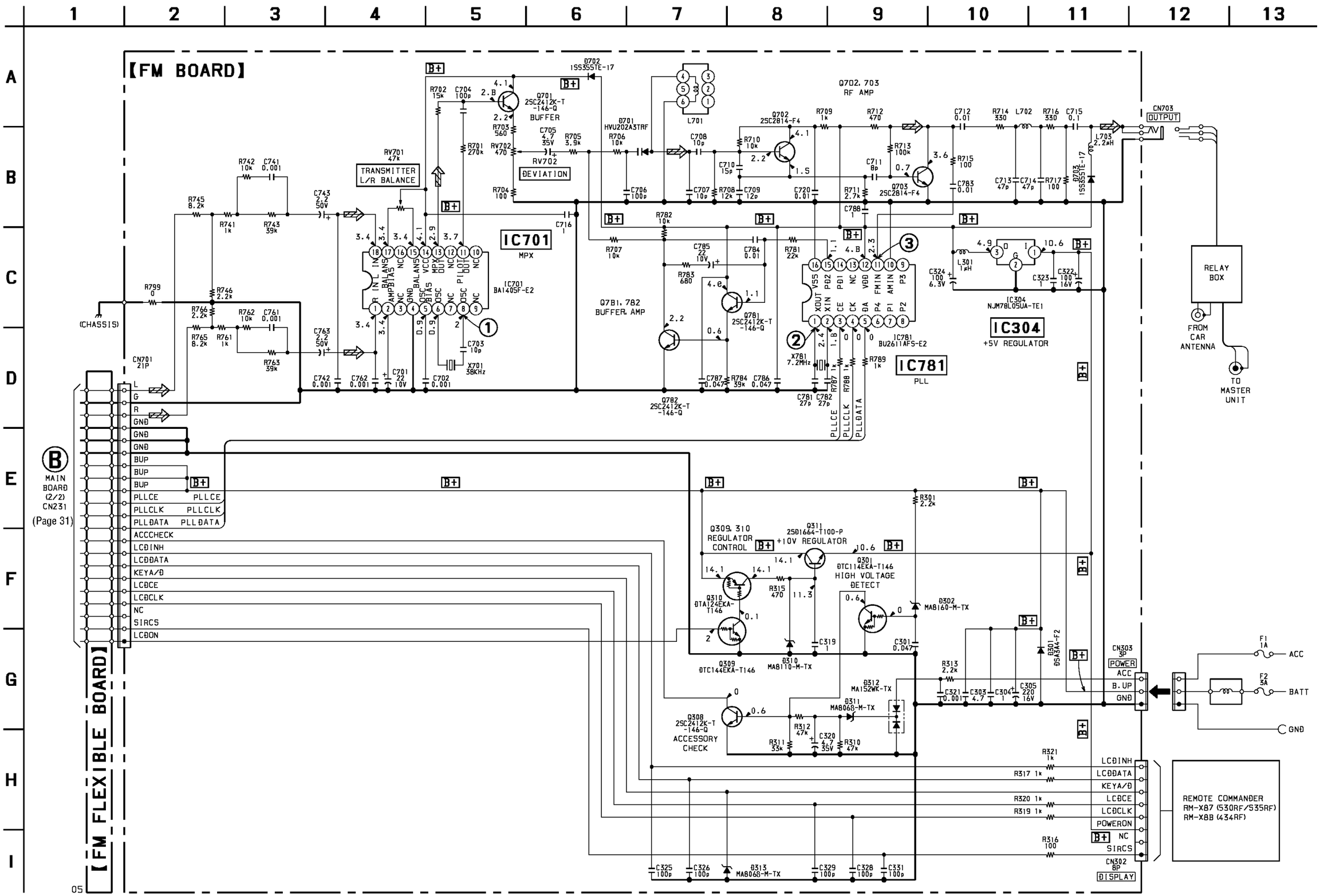
• **Semiconductor Location**

Ref. No.	Location
D310	B-3
D701	D-3
D702	D-2
D703	B-4
IC304	C-4
IC701	E-3
IC781	E-4
Q701	D-3
Q702	D-4
Q781	D-2
Q782	C-2

• **Semiconductor Location**

Ref. No.	Location
D301	B-4
D302	C-4
D311	C-4
D312	C-4
D313	A-1
Q301	A-4
Q308	A-2
Q309	A-3
Q310	A-4
Q311	A-4
Q703	D-4

7-11. SCHEMATIC DIAGRAM – FM/POWER Section – • See page 36 for Waveforms. • See page 37 for IC Block Diagrams.



7-12. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC201 CXP740056-004R (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1 to 3	NC		Not used (open)
4	AMUTE	O	Audio line muting on/off control signal output terminal "H": muting on
5	CDXLT	O	Serial data latch pulse signal output to the CXD2598Q (IC101)
6	CDDATA	O	Serial data output to the CXD2598Q (IC101)
7	CDCLK	O	Serial data transfer clock signal output to the CXD2598Q (IC101)
8	CDON	O	D/A converter and servo section power supply on/off control signal output "H": power on
9	ELVON	O	Mechanism deck section power supply on/off control signal output "H": power on
10 to 35	NC		Not used (open)
36	LCDON	O	The LCD in remote commander and FM transmitter section power supply on/off control signal output "H": power on
37	LCDCE	O	Chip enable signal output to the LCD driver in remote commander
38	$\overline{\text{RESET}}$	I	System reset signal input from the reset switch (SW302) and reset signal generator (IC303) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
39	GND	—	Ground terminal
40	XTAL	O	Main system clock output terminal (12 MHz)
41	EXTAL	I	Main system clock input terminal (12 MHz)
42	TEXTSEL	I	CD text on/off setting terminal "L" CD text on 434RF: fixed at "H" (open) 530RF/535RF: fixed at "L"
43	LCDINH	O	Inhibit signal output to the LCD driver in remote commander
44	LCDDATA	O	Serial data output to the LCD driver in remote commander
45	LCDCLK	O	Serial data transfer clock signal output to the LCD driver in remote commander
46	CFSEL	I	Custom file on/off setting terminal "L" custom file on 434RF: fixed at "H" (open) 530RF/535RF: fixed at "L"
47	EEINIT	I	Initialize signal input for the EEPROM (IC203) "H": format 434RF: not used (open) 530RF/535RF: fixed at "L"
48	EEDATA	I/O	Two-way data bus with the EEPROM (IC203) (530RF/535RF only) 434RF: not used (open)
49	EECLK	O	Serial data transfer clock signal output to the EEPROM (IC203) (530RF/535RF only) 434RF: not used (open)
50	VSS		Ground terminal (for A/D converter)
51	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
52	VDD		Power supply terminal (+5V) (for A/D converter)
53	SINGLE	I	Setting terminal for the single disc/multiple discs mode "L": single mode, "H": multiple discs mode Fixed at "H" in this set (open)
54	LDON	O	The laser automatic power control on/off signal output "H": automatic power control on
55	AGCHOLD	O	RF AGC hold on/off signal output "H": hold
56	RFAGC	I/O	RF AGC level control signal output "L (O) ": off, "I": 40%, "H (O) ": 60%
57	H.TEMP	I	High temperature sensor input terminal Not used (open)
58	KEYIN	I	Key input terminal (A/D input) from the remote commander
59	EHS	I	Elevator height position detect input from the RV202 (elevator height sensor) (A/D input)
60	MCK	I	Input of signal for the fine adjustment (elevator height (address) adjustment; RV201) of elevator position (A/D input)
61	NC		Not used (open)
62	$\overline{\text{ACCIN}}$	I	Accessory detect signal input terminal "L": accessory on
63	EJECT	I	Eject switch (SW301) input terminal "H" active
64	MAGSW	I	Magazine in/out detect switch input Not used (open)
65	$\overline{\text{LOAD1}}$	I	Chucking end detect switch (SW1) input terminal "L": When completion of the disc chucking operation
66	$\overline{\text{LOAD2}}$	I	Save end detect switch (SW2) input terminal "L": When completion of the disc save operation
67 to 70	NC		Not used (open)
71	CH.F	O	Motor drive signal (save direction) output to the chucking motor drive (IC201) "L" active *1
72	CH.R	O	Motor drive signal (chucking direction) output to the chucking motor drive (IC201) "L" active *1
73	ELVR	O	Motor drive signal (elevator down direction) output to the elevator motor drive (IC301) "L" active *2
74	ELVF	O	Motor drive signal (elevator up direction) output to the elevator motor drive (IC301) "L" active *2
75	BUCHK	I	Battery detect signal input terminal "H": battery on
76	MGLK	I	Magazine detect switch (SW201) input "L": magazine is set
77	SQSO	O	Subcode Q/text serial data output to the CXD2598Q (IC101)
78	NC		Not used (open)
79	SQCK	O	Subcode Q/text serial data transfer clock signal output to the CXD2598Q (IC101)
80	KEYACK	I	Input of acknowledge signal for the key entry Acknowledge signal is input to accept from the remote commander in the power off status
81	NC		Not used (open)
82	SCOR	I	Subcode sync (S0+S1) detection signal input from the CXD2598Q (IC101)
83	SIRCS	I	SIRCS signal input from the remote commander (530RF/535RF only)
84	TEX	I	Sub system clock input terminal Not used (open)
85	TX	O	Sub system clock output terminal Not used (open)
86	VSS		Ground terminal
87	VDD		Power supply terminal (+5V)
88	NC	—	Not used (open)
89	$\overline{\text{LIMSW}}$	I	Sled limit in detect switch (SW3) input terminal "L": When the optical pick-up is inner position
90	FOK	I	Focus OK signal input from the CXD2598Q (IC101) "H" is input when focus is on ("L": NG)
91	GFS	I	Guard frame sync signal input from the CXD2598Q (IC101) "L": NG, "H": OK
92	SCLK	O	Serial data transfer clock signal output to the CXD2598Q (IC101)
93	SENS	I	Internal status signal (sense signal) input from the CXD2598Q (IC101)
94	XRST	O	System reset signal output to the CXD2598Q (IC101) "L": reset
95	ADON	O	Power supply on/off control signal output for the A/D converter "L": power on
96	PLLCE	O	Chip enable signal output to the PLL IC (IC781)
97	PLLCLK	O	Serial data transfer clock signal output to the PLL IC (IC781)
98	PLLDATA	O	Serial data output to the PLL IC (IC781)
99, 100	NC	—	Not used (open)

*1 chucking motor (M103) control

Mode / Terminal	STOP	LOAD CHUCKING	SAVE	BRAKE
CH.F (pin ⑦①)	"H"	"H"	"L"	"L"
CH.R (pin ⑦②)	"H"	"L"	"H"	"L"

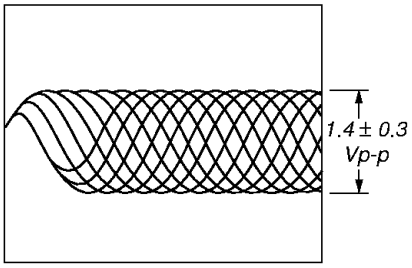
*2 elevator motor (M104) control

Mode / Terminal	STOP	ELEVATOR UP	ELEVATOR DOWN	BRAKE
ELVF (pin ⑦④)	"H"	"L"	"H"	"L"
ELVR (pin ⑦③)	"H"	"H"	"L"	"L"

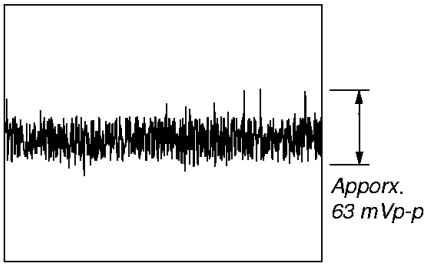
• **Waveforms**

– RF Board –

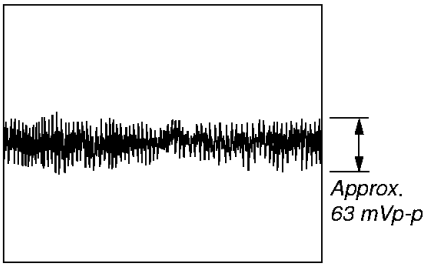
❶ IC101 ⑯ (RFO) (play mode)



❷ IC101 ⑭ (FE) (play mode)

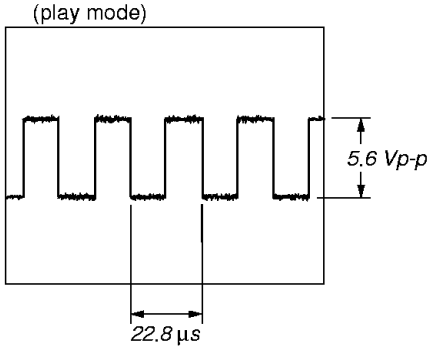


❸ IC101 ⑬ (TE) (play mode)

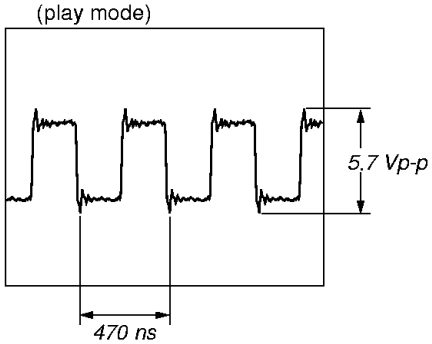


– MAIN Board –

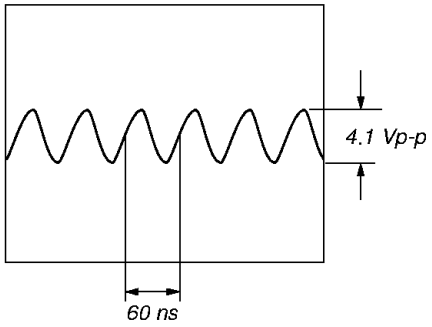
❶ IC101 ㊼ (LRCK), ㊽ (LRCKI) (play mode)



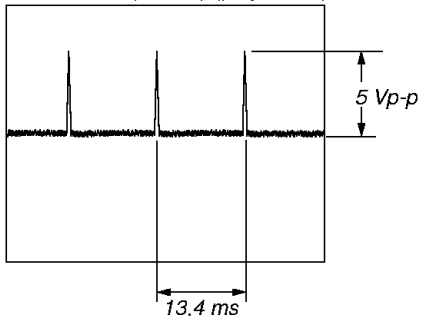
❷ IC101 ㊶ (BCK), ㊷ (BCKI) (play mode)



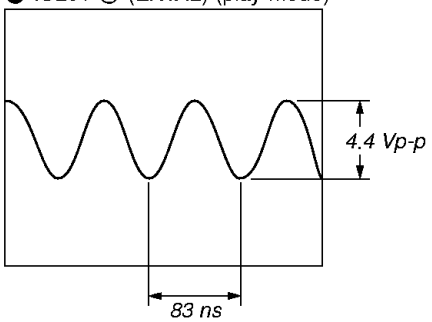
❸ IC101 ㊻ (XTAI) (play mode)



❹ IC101 ㉔ (SCOR), IC201 ㉜ (SCOR) (play mode)

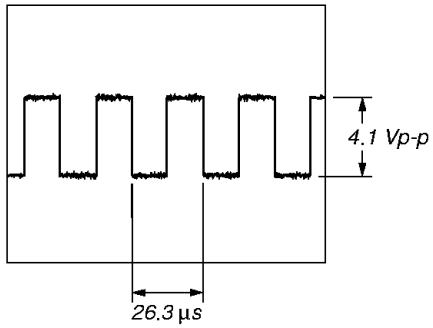


❸ IC201 ㊶ (EXTAL) (play mode)

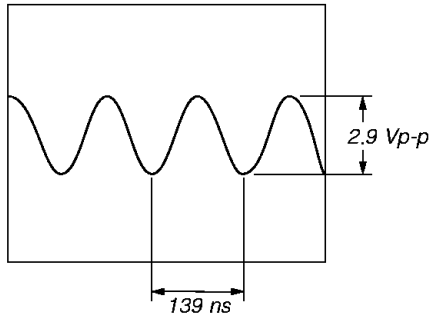


– FM Board –

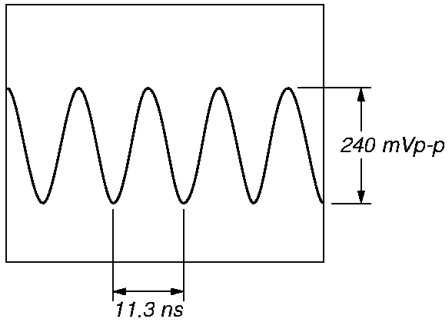
❶ IC701 ⑧ (38K) (play mode)



❷ IC781 ① (XOUT) (play mode)



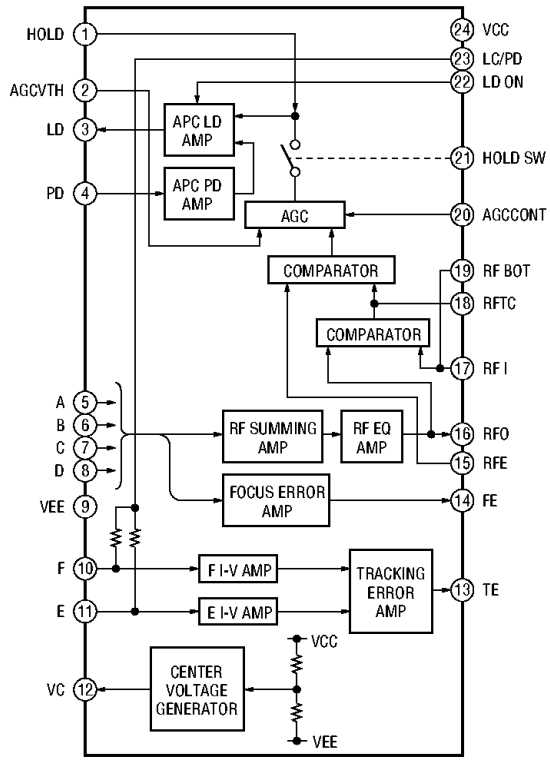
❸ IC781 ⑪ (FMIN) (play mode)



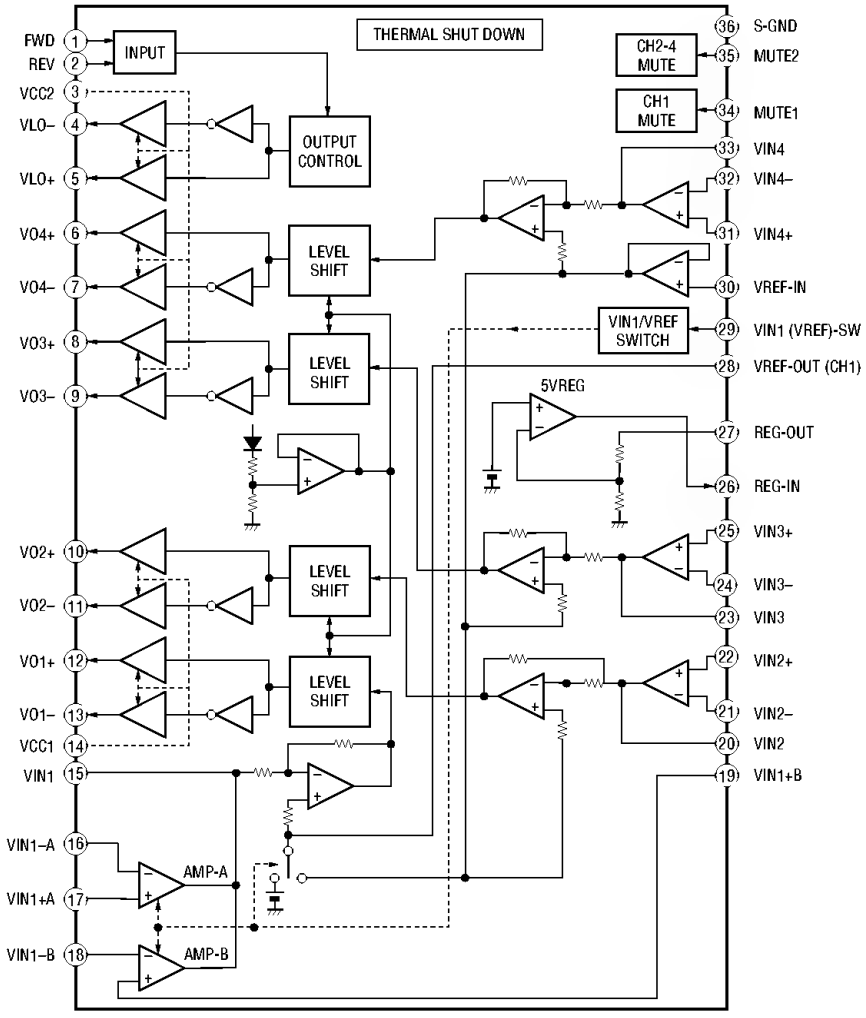
• **IC Block Diagrams**

– RF Board –

IC101 CXA2596M-T6

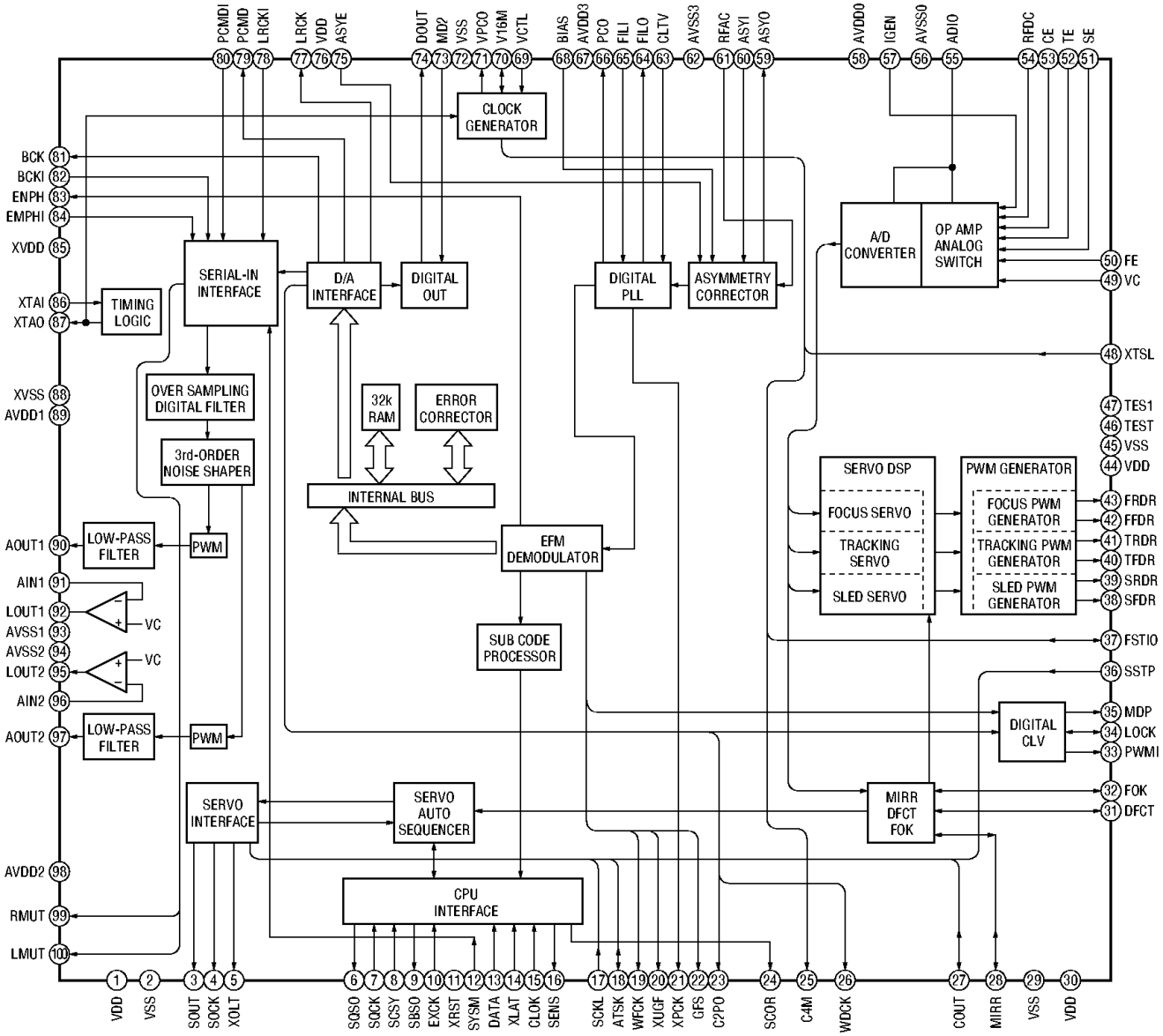


IC201 LA6556

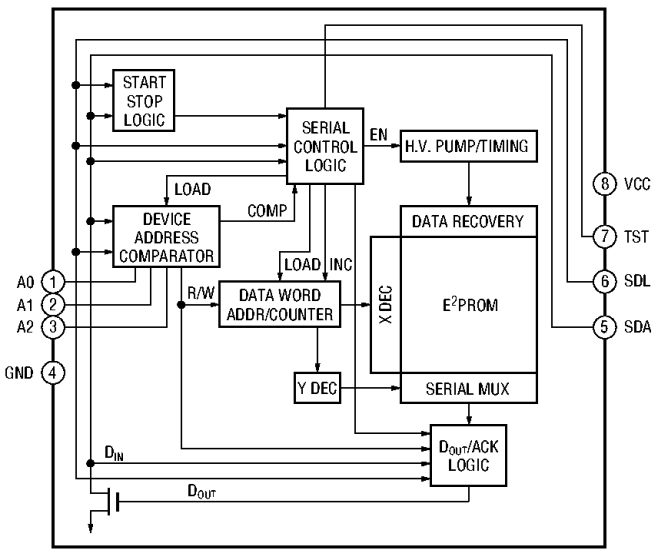


– MAIN Board –

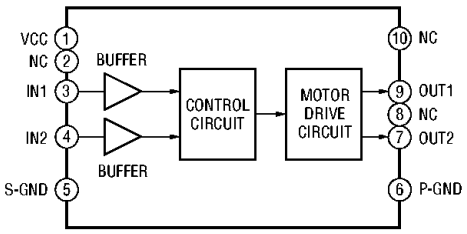
IC101 CXD2598Q



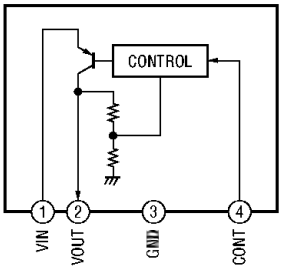
IC203 BR24C16FJ-E2 (CDX-530RF/535RF)



IC301 LB1930M-TLM

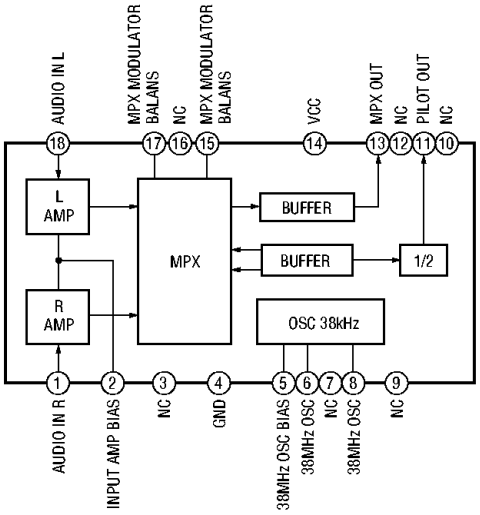


IC304 NJM2395F08
IC305 NJM2395F05

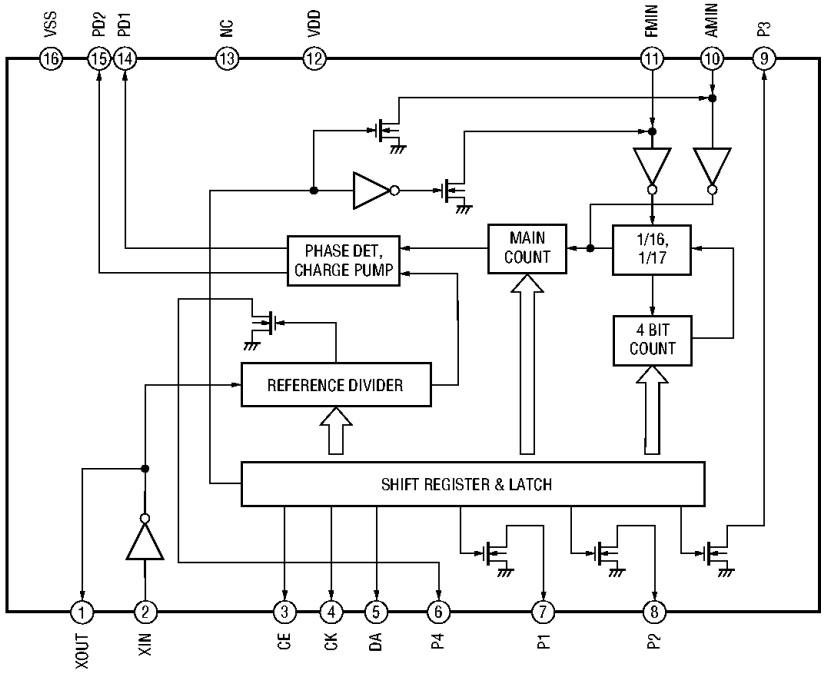


– FM Board –

IC701 BA1405F-E2



IC781 BU2611AFS-E2



SECTION 8
EXPLODED VIEWS

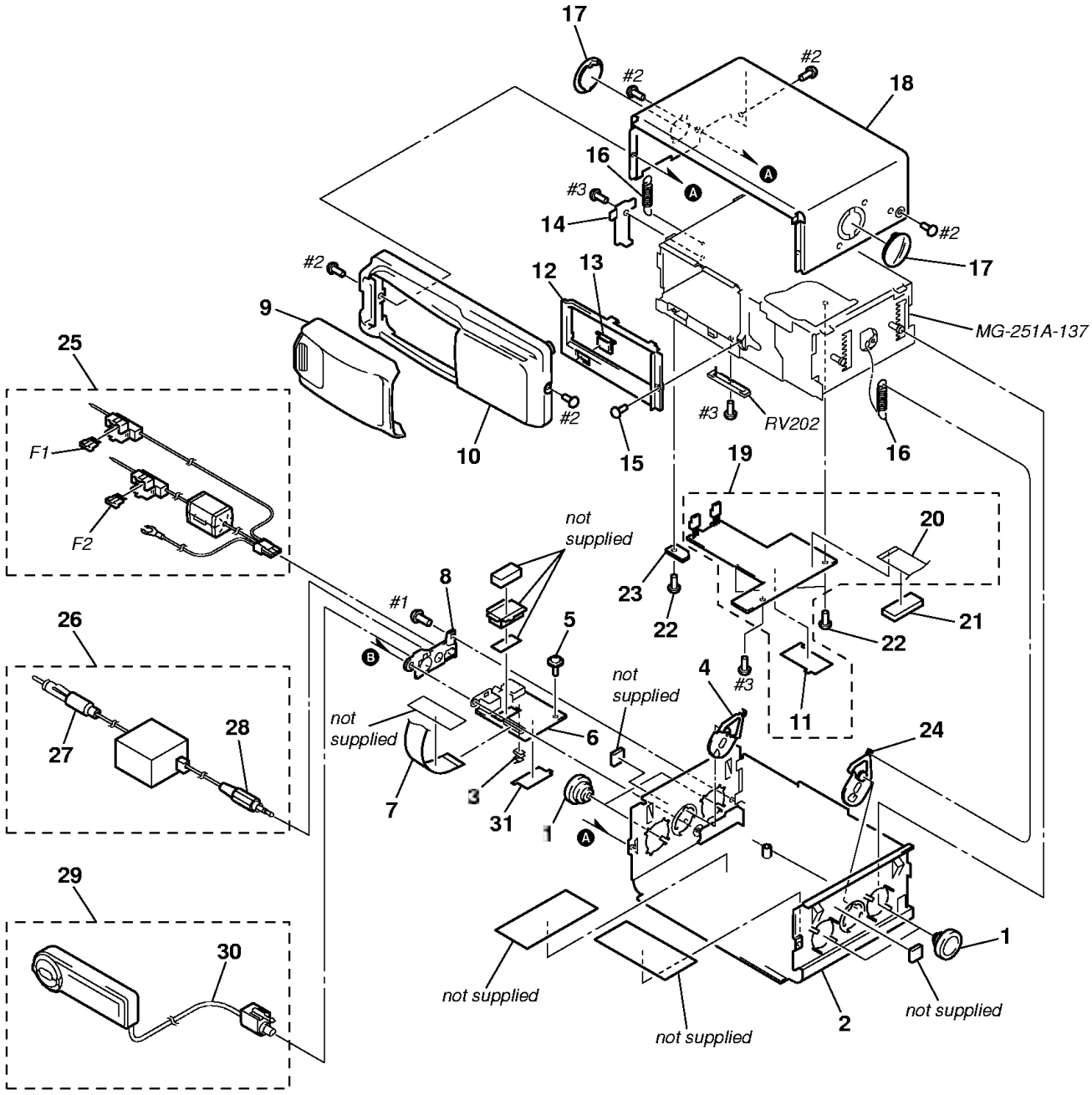
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

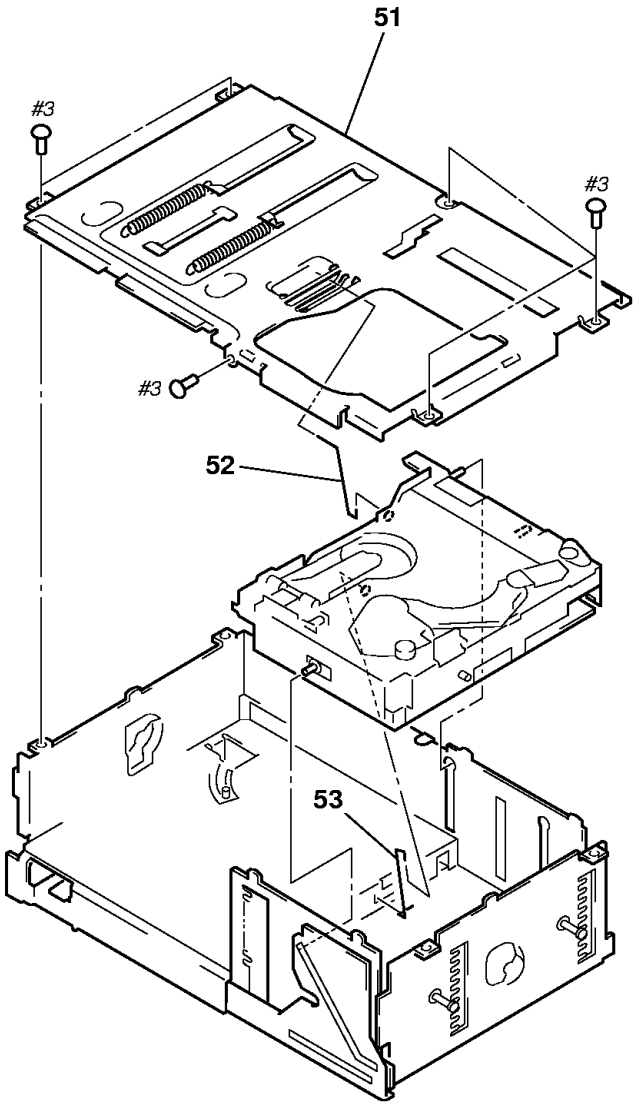
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(1) COVER SECTION

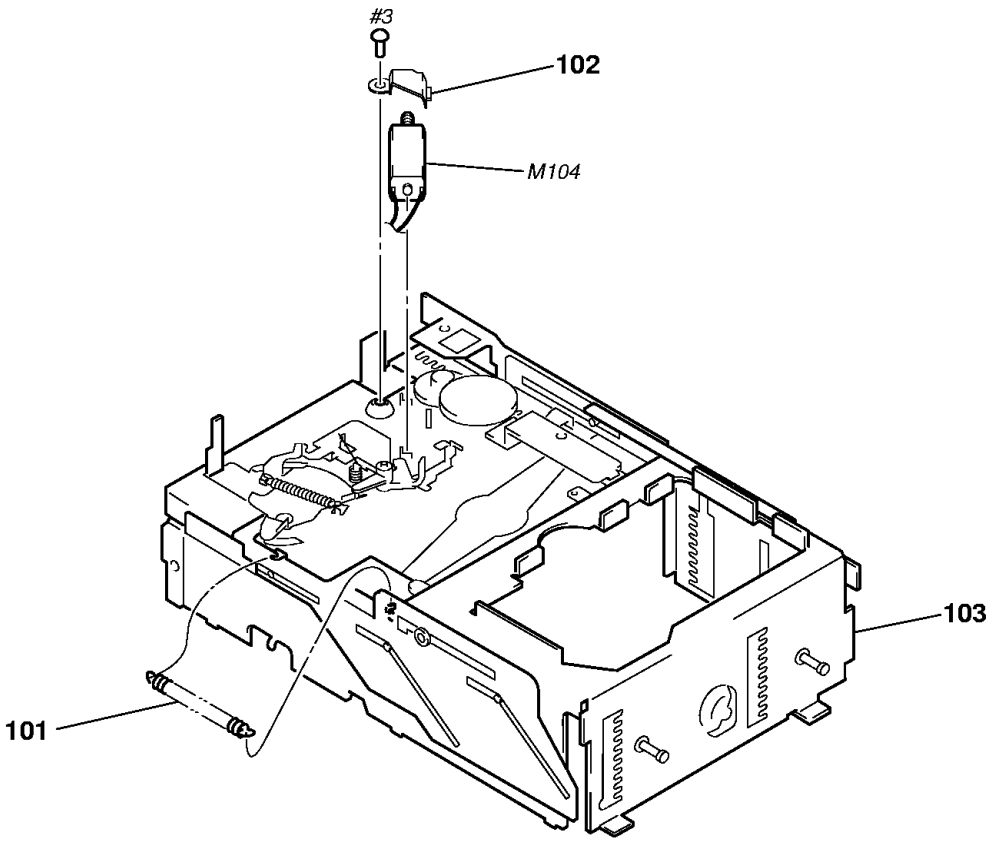


(2) MECHANISM DECK SECTION-1 (MG-251A-137)



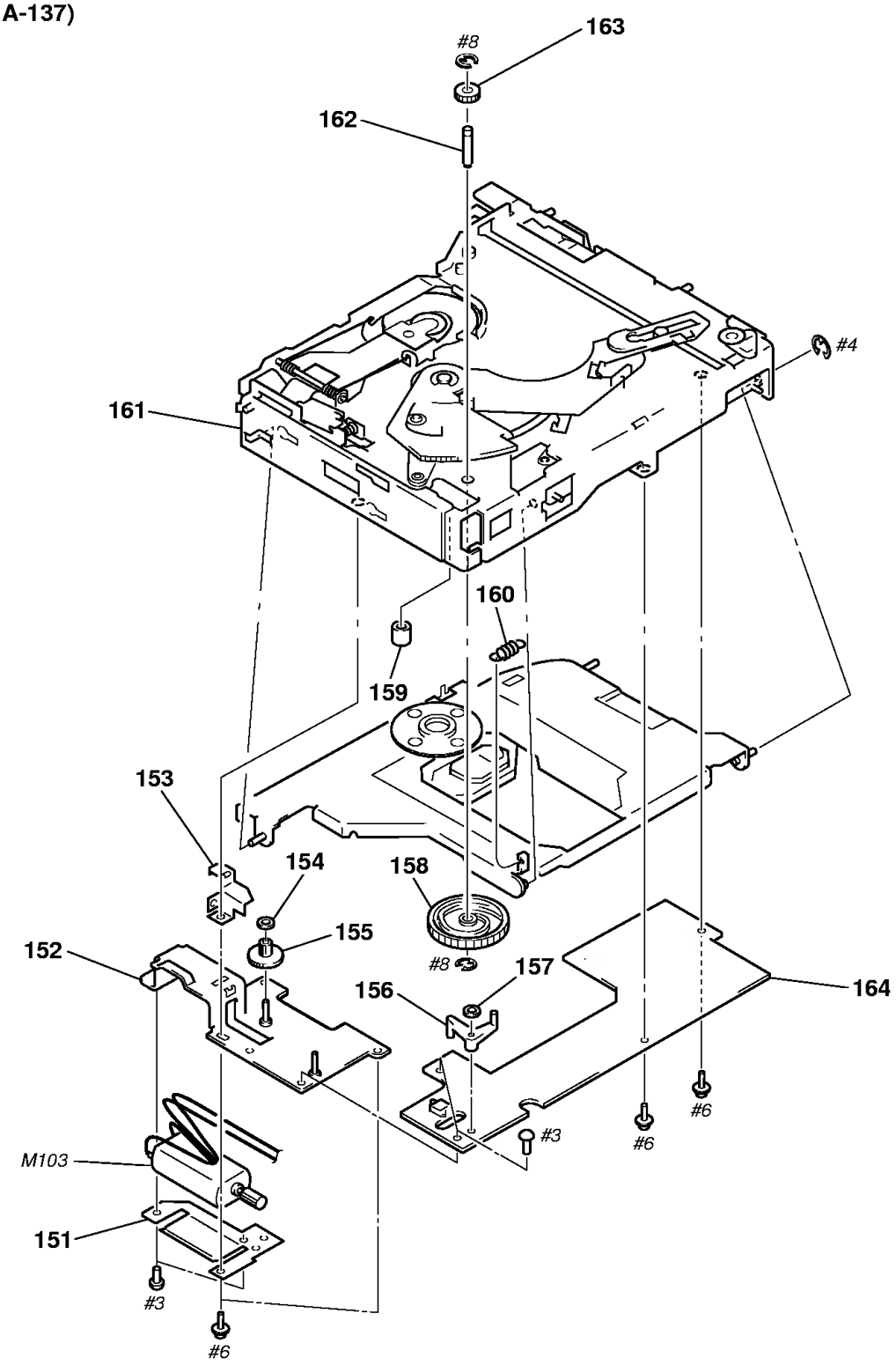
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3378-091-1	CHASSIS (U. S) SUB ASSY		53	3-011-997-01	SPRING (STOPPER. LOWER)	
52	3-024-161-01	SPRING (SUT)					

(3) MECHANISM DECK SECTION-2 (MG-251A-137)



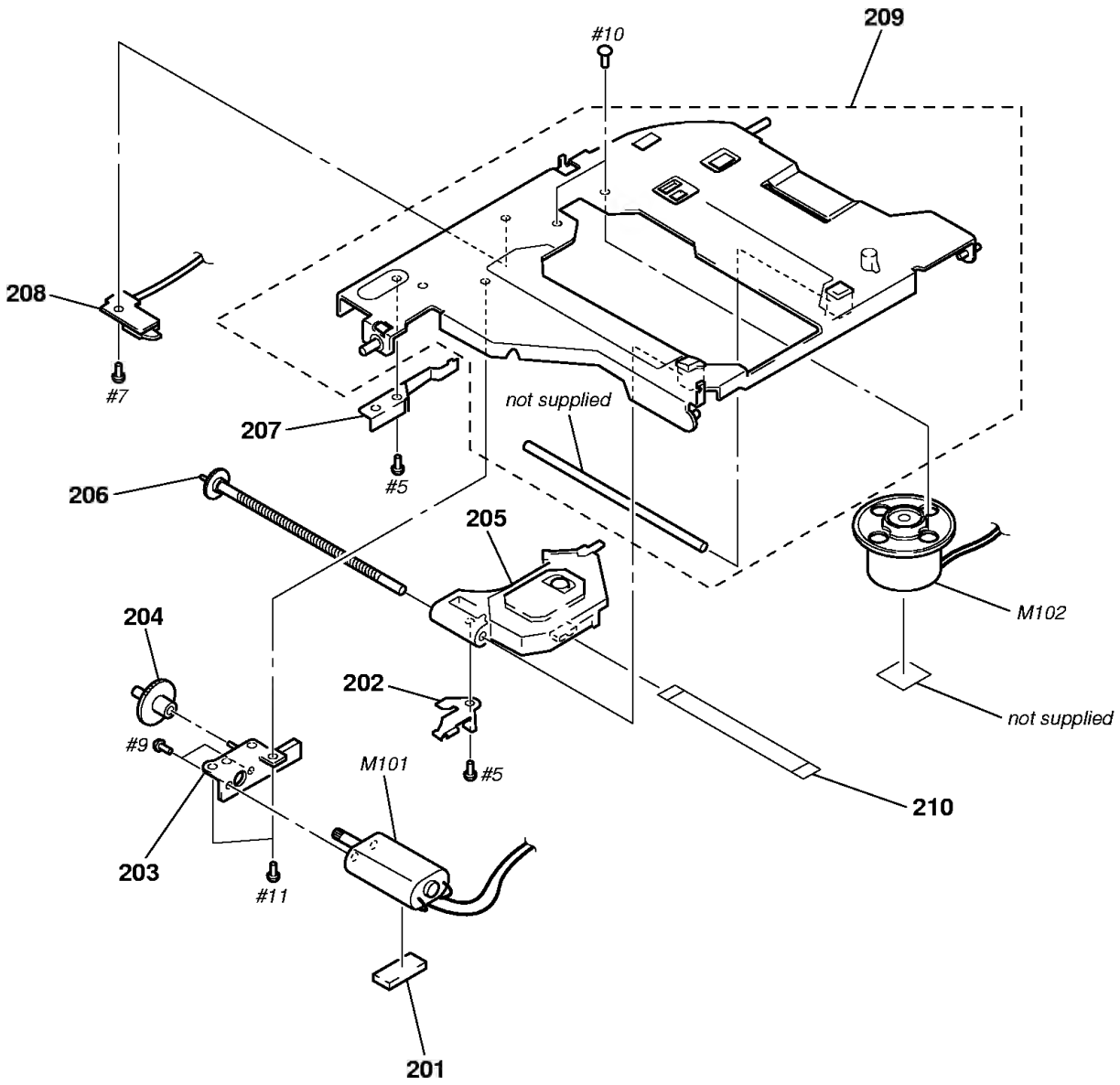
Ref. No.	Part No.	Description	Remark
101	3-024-170-01	SPRING (SB), TENSION	
* 102	3-040-790-01	BRACKET (EVM. S)	
103	X-3378-092-1	CHASSIS (D. S) SUB ASSY	
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)	

(4) MECHANISM DECK SECTION-3
(MG-251A-137)



Ref. No.	Part No.	Description	Remark
* 151	3-024-150-01	RETAINER (CHM)	
* 152	X-3378-080-1	BRACKET (CHM. D) ASSY	
153	3-010-270-01	COVER (CHM)	
154	3-321-813-01	WASHER, COTTER POLYETHYLENE	
155	3-017-139-01	GEAR (NWL)	
156	3-010-255-02	ARM (NSW)	
157	3-573-936-00	STOPPER, REEL	
158	X-3373-552-1	GEAR (LOAD 1) ASSY	
159	3-010-252-01	ROLLER (CRE)	
160	3-010-268-01	SPRING (DH), TENSION	
* 161	A-3290-194-K	MAIN ASSY, CHASSIS (EVY)	
162	3-010-254-01	SHAFT (ROTARY PREVENTION C)	
163	3-010-253-01	GEAR (LOMINI)	
* 164	A-3326-000-A	RF BOARD, COMPLETE	
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)	

(5) MECHANISM DECK SECTION-4 (MG-251A-137)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
201	3-911-215-02	SHEET (LEAD RETAINER)	
202	3-025-743-01	SPRING (FEED), LEAF	
203	X-3378-101-1	HOLDER (SLED. S) ASSY	
204	3-931-832-01	GEAR (SL MIDWAY)	
⚠205	8-820-103-03	OPTICAL PICK-UP KSS-720A/K1RP	
206	A-3291-669-A	SHAFT (FEED) ASSY	
207	3-010-263-01	DETENT (SHAFT THRUST)	
* 208	1-676-524-11	LSW BOARD	
209	A-3301-954-A	BASE (OPT. S) (J) ASSY	
210	1-676-341-11	OP FLEXIBLE BOARD	
M101	A-3315-151-A	SLED MOTOR ASSY (251)	
M102	A-3301-998-A	SPINDLE MOTOR (S) SUB ASSY	